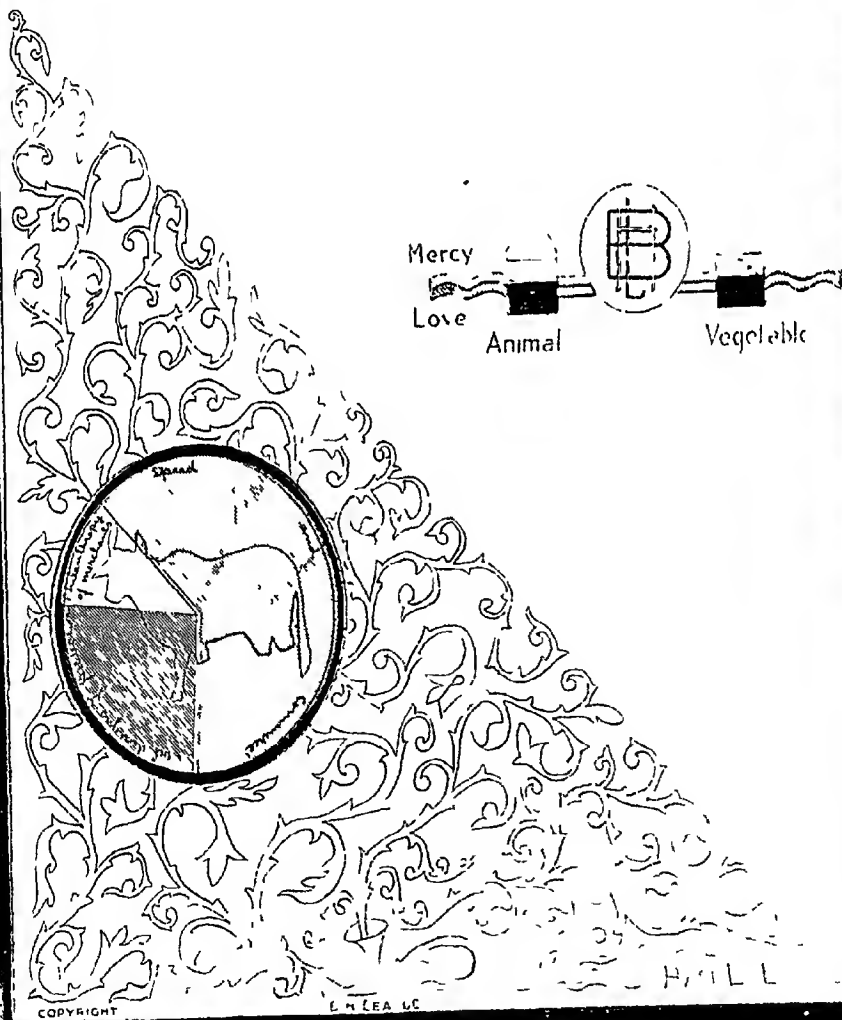
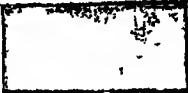




Romance of the COW


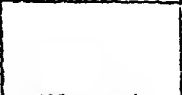





For Explanation See Page 231-232

The Colors in the Chromatic emblem

1		Love Cleansed from Selfishness
2		Intellect cleansed from Selfishness
3		Sympathy and Compassion

The Colors in the diagram.

5		Casual Body (Buddhi)
4		Lower Mind
3		Kam-Dev
2		Pranamaya Kosh
1		Anamaya Kosh

Manomaya Kosh
Sutisham Chakra

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H. H. League

Hare Lal

ROMANCE OF THE COW

Second Prize Essay in The B. H. League's Prize Essay Scheme
No. 92 (1932) for Graduates of the
Bombay Presidency

BY

Mr. DAHYABHAI H. JANI, B. Ag.

GOLD MEDALIST AND SPECIALIST IN DAIRYING ETC.

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BOMBAY 2.

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AWAKE,

MOTHER!

O Young through all thy immemorial years,
Rise, Mother, rise regenerate from thy gloom.
And like a bride high-mated with the spheres,
Beget new glories from thy ageless womb.
The Nations that in fettered darkness weep,
Crave thee to lead them where great mornings break.

Mother, O Mother, wherefore dost thou sleep!
Arise and answer for thy children's sake.
Thy future calls thee with a manifold sound,
To crescent honours, splendours, victories vast;
Waken, O slumbering Mother and be crowned
Who once were Empress of the Sovereign Past

—Sarojini Naidu

Oh, India! Rise like Lions after slumber
In unvanquishable numbers;
Shake your chains to Earth like dew,
Which in sleep had fallen on you!
Re are many, They are few.

—Shelly

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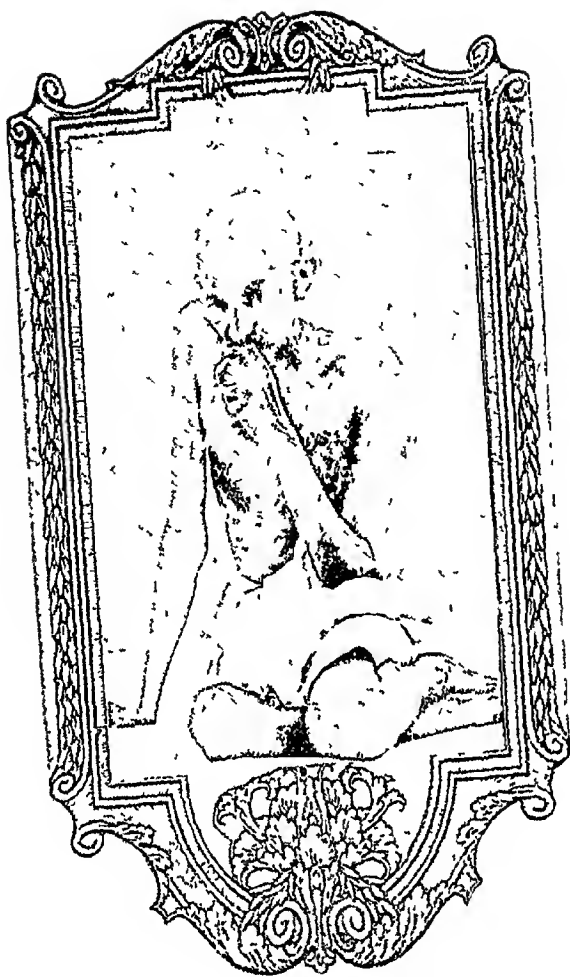
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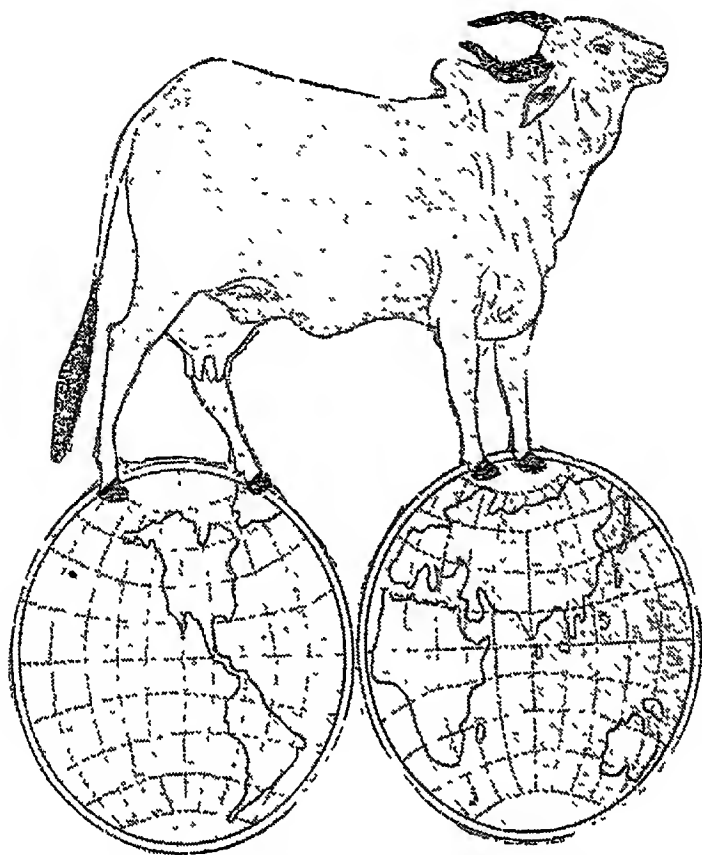


This my Little Labour of Love is gratefully Dedicated to

My dear Bapu,

*The living Barometer of Good, True and Beautiful of the
wide world, to whom the question of the Cow is next to
none in importance and to whom the writer owes the most
of his being and doing.*

PUBLISHERS' NOTE



The sanctity of animal life is one of the Divine heritages of mankind which entitles him to hold a higher place in the creation of God. India has, from times immemorial, recognised this sanctity of animal life and made it a cardinal principle of its religions, Prophets and Priests of which have practised and preached the same, in all ages. It is due to this, along with other considerations that Aryan culture and civilisation is looked to, as a source of inspiration by many nations of the world.

The reason why the sanctity of life, translated into action by the practice of Ahimsa, justifies rationalism and humanity, can well be found in the following words of Ruskin "Don't fancy that you will lower yourselves by sympathy with the lower creatures, you cannot sympathise with the Higher unless you do with these." True civilisation and humanity is therefore measured in terms of sympathy, love and mercy shown by mankind to all creatures especially the lower ones

The Bombay Humanitarian League as is wellknown, strives to bring about the realisation, among those who for various reasons, have grown indifferent or callous in their treatment of lower animals and consequently their own kind, of the inevitable need for Ahimsa. It is one of such efforts of the League, that gives me this opportunity to present to the readers

ROMANCE OF THE COW

the present book entitled "Romance of the Cow" so ably written by Mr. D. H. Jani, B. Ag. It is an outcome of the Prize Essay Competition scheme No. 92 announced by the League in the year 1982 with the co-operation of Bombay Gorakshak Mandal, Shri Gogras Gojivdan Mandal and the Indian Cotton Exchange Ltd., all of whom contributed towards the prizes for the said scheme, through which essays were invited from Graduates on "Cattle Problem in India," in which Mr. Jani was one of the prize winners

The League published the first essay in the said scheme, written by Mr. M. B. Barad, B A., S T. C., Head Master, Nar High School, under the title "Cattle Problem in India" in the year 1982 and could notice a good demand for it among the readers. The treatment of the subject by Mr. Barad, in the said book, being very lucid and convincing, having been supported by facts and figures and the extracts bearing on the various points, quoted from scriptures and other authorities, the book has succeeded in making out a strong case for the cattle, pointing out the ways and means for their amelioration. To cope with the growing demand 2nd Edition of it has just been brought out.

Mr. Jani's composition, however, has its own peculiar importance. His great love and study, mingled with some practical experience, prompted him as it were to make the Essay a standard reference book on the subject, including illustrations, charts, tables, quotations and such other matters collected by him during past years, throughout his study of the question. Though the book deserved earlier publication, it could not be soon undertaken by the League for the heavy printing charges it entailed until last year when with the co-operation of Shri Gogras Gojivdan Mandal, it was finally decided to publish the same.

The delay in publishing the book, however, added materially to its worth rather than depreciating it, as while retouching it finally, substantial additions have been made by the Author adding much to its value both as "a book of reference" on the cattle question and a useful source of information regarding improvement of cattle and development of dairy industry in India on scientific lines. As the Book itself eloquently speaks of the love cherished by the Author for the cause and his immense labour of love devoted to the composition, I have nothing more to add than to congratulate him for his useful production.

Regarding the subject matter of the book, I have painfully to mention that sanctity of life, though a pious principle of religion, has intolerably been disregarded in past years in case of all animal life even including the cow and man. The cow, regarded as mother of all animals, has herself been thrown in deplorable condition by the callous indifference even of those who hold her in high esteem, with the result that the Kamdhenu of India has almost been lost to her and to the teeming millions depending on the cow. Mr. Jani has made a solid attempt to point out the practical ways and means of her protection and improvement which should commend to all humanitarians and others interested in the welfare of the country.

With all the bearing of the problem of cow on the national welfare and economic emancipation, I regret to have to note the apathy with which the problem has been viewed so far both by the Government and the National leaders. But as the leaders like Mahatma Gandhi, Pandit Madan Mohan Malaviya, Babu Rajendra Prasad, Dr. Syed Mohmed and such others have in their heart a burning desire to solve the problem in the larger interests of the country ere long, all hopes centre in them now. With Mahatma Gandhi's inspiring lead in the matter, the question will be successfully worked out in course of time.

The attitude of Government, in this matter, is by no means encouraging. The policy pursued by them in this question has so far been destructive rather than constructive. They seem to have visualised the problem entirely from the European point of view and ignored the conditions patent to India. I am glad, however, that Dr. Norman Wright, who visited India to enquire into the question of cattle and Dairy Industry, has insisted in his report that 'the Indian cattle question must be considered on its own lines because of the special conditions of India which differentiate the problem of cattle and Dairy Industry from corresponding problems in other countries.' The Government would do well to give effect to his recommendations as early as possible.

Reasons like the above are responsible for the numerical inadequacy and the growing deterioration of cattle, depletion of the best breeds due to indiscriminate slaughter and the terrible results that have followed in the wake, namely physical and moral destruction of manhood in India and shortage in the out-turn of agricultural products. The importance and urgency of preserving and improving the cattle resources of the country can thus be very well realised.

It would be useful to note that the main factors which contribute to the present unsatisfactory condition of cattle in India are, (1) want of proper breeding (2) want of grazing grounds (3) indiscriminate slaughter and (4) export of good cattle. With regard to the question of breeding, the initiative taken by His Excellency the Viceroy promises some improvement provided disabilities coming in the way of breeders are removed and proper encouragement given to them. At a time when valuable indigenous breeds in several provinces are almost dying out, promiscuous efforts will do no good. Mass action is necessary and should be taken by Government at all costs.

Though the subject of grazing grounds was thoroughly discussed by the Imperial Board of Agriculture and special Committees and Commissions appointed frequently, their recommendations only stand on records. Preservation of grazing grounds by legislation, depreciation of all restriction of grazing rights, improvement of waste areas to be taken systematically and the land thus reclaimed to be thrown open for grazing, legislation to prevent encroachment upon grazing grounds and acquiring them at the cost of the state and local bodies, are some of the recommendations of Imperial Board of Agriculture, which would relieve the situation if given effect to. But they are honoured only by being recorded and

ROMANCE OF THE COW

shelved to be decayed, rather than by being given effect to wholly or partially so far. Under the circumstances, the action of the present Congress Ministry in Bombay Presidency in exempting cattle from grazing fees has been commended on all hands and holds out a hope for further reforms in the matter

The pseudo-economic issue is often raised that the conservation of grazing grounds into cultivated areas helps raising of more crops for human beings. But it is not safe to encroach upon the fodder resources of cattle on that issue. Indeed, efforts should be made by having recourse to intensive methods of agriculture, to raise more crops from the same area as they do in western countries

Perhaps the most important of all matters relating to the subject, demanding prompt action is the question of indiscriminate slaughter of cattle. In this respect also, superficial observers viewing the question from western point of view might say that there is sufficiency of cattle and what is needed, is weeding the existing number or of the large number of uneconomic cattle. But a little honest and deeper study of the question from an Indian point of view, would reveal the fact that the manure value of so-called uneconomic cattle more than compensates for their board. In view of the economic arrangement of agriculture in India, cattle in all conditions are helpful. Yet even economically useful cows and agricultural cattle are indiscriminately slaughtered in overwhelming numbers. This serious drain on country's cattle wealth can effectively be checked only by suitable legislation. In all civilised countries there are laws preserving useful milch and agricultural cattle and even birds by penalising their slaughter. It is a pity, however, that such a legislation is not yet considered to be fit for introduction in our country, where its need is paramount, even inspite of the recommendations of Government experts and the disastrous results suffered by the country. In view of the interest taken by the present Viceroy and the National party prominently participating in the legislatures and administration, I hope this past blunder will soon be rectified by having a suitable legislation prohibiting indiscriminate slaughter, of course as an initial measure for complete protection of cattle in our country.

Another important identity working for the cause of cattle in India deserving our attention, is our Goshalas and Pinjarapoles. The institution of Pinjarapole is as old as our faith in the sanctity of animal life. It is based on our sense of duty to them and spirit of service. They are meant to be places where all our regard for animals should be translated into action. They have a meritorious basis. But with the increasing callousness of humanity in general towards animal life, these institutions suffered immensely in respect of the fulfilment of their aims obviously because the pressure on them increased and sympathy and support decreased. To-day many of them stand condemned, of course, not the institution nor its pious objects but the lack of efficient management. Again with the growing indifference and economic weakness of the people using the cattle, their responsibilities to look after their cattle has to be borne to a considerable extent by institutions living for the welfare of the cattle. There is, there-

PUBLISHERS' NOTE

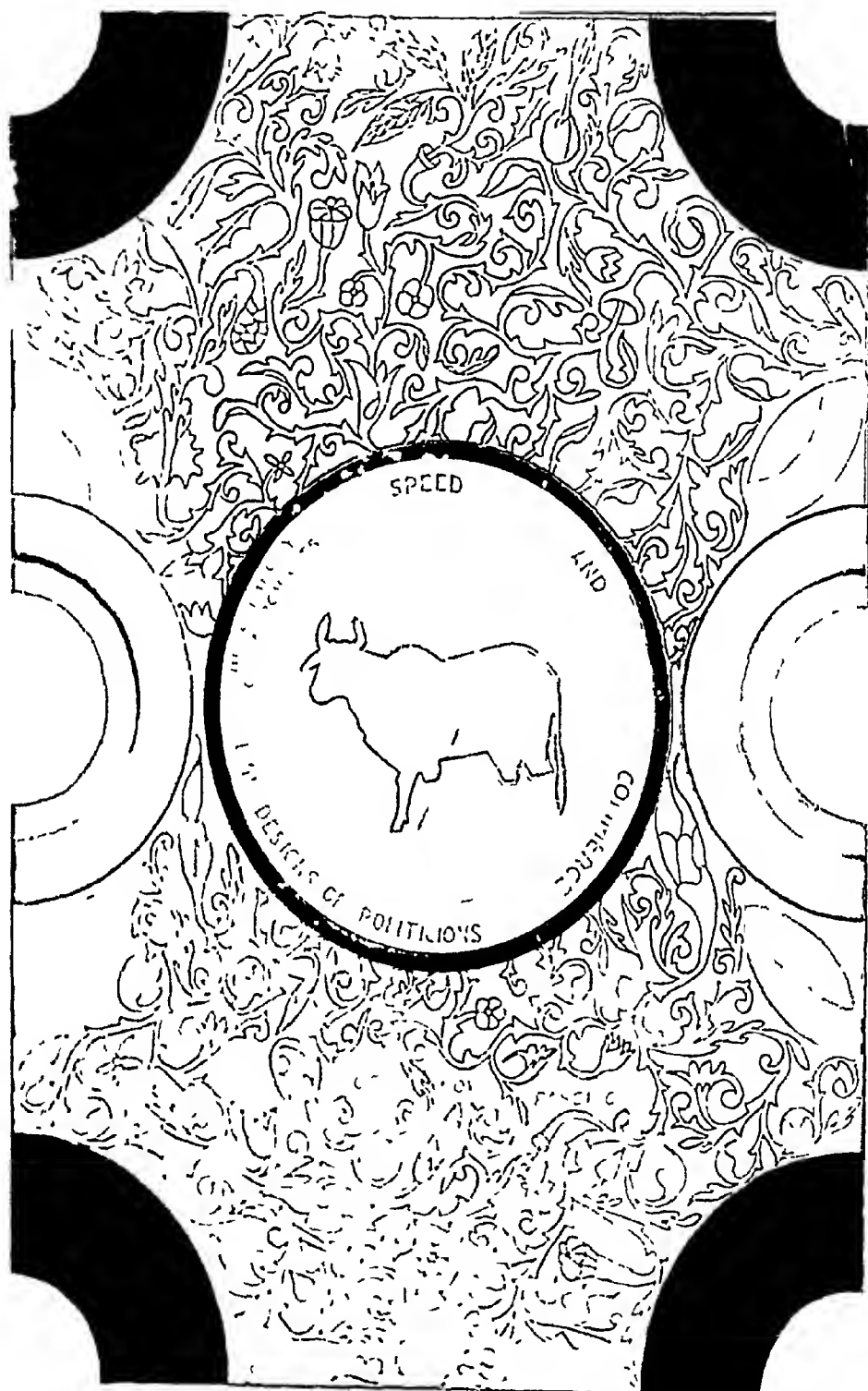
fore, an urgent need to widen and modernise the working of the Pinjarapoles and Goshalas so as to cope with the increased needs of the times.

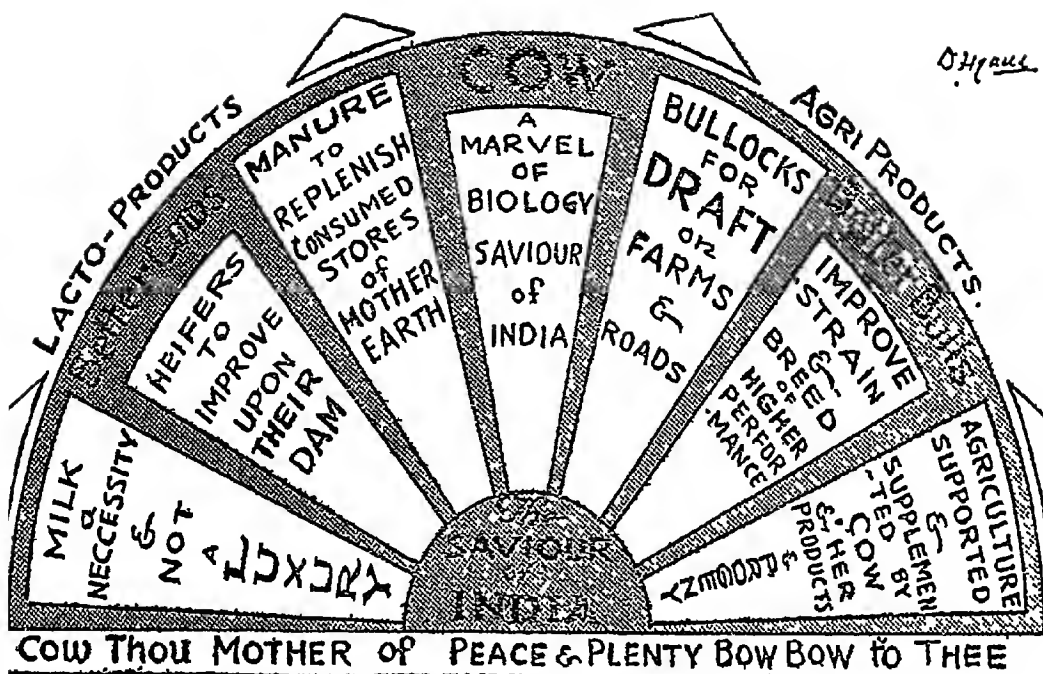
To the critics of the Institution, who often say "that such institutions waste large amounts of money only in prolonging for a short period the life of so many animals which have reached the end of their natural existence", I would like to point out that since life is precious in the world, anything spent in saving it or protecting it, is worth more than heaps of gold. The merit and moral achieved for it more than compensates for the money spent by those who acknowledge sanctity of life and Ahimsa. The fallacy of mere economic considerations can be realised if only they are applied to human lives. While we are anxious to get more comforts, pensions, provident funds, and all provisions to live our legitimate span of life though uneconomic in old age, and are out to establish hospitals, shelter-houses and such other places for the relief of the distressed humanity only out of charities, it is highly selfish and irrational to deny others-the sub-human creatures even their right to live legitimate span of life and that too even after helping the humanity in various ways during their days of vigour; or to say that money spent after such charities is a national waste. In this respect it is that class of people who are unjust to others and neither "Serve nor sacrifice" who deserve to be criticised or condemned rather than those who do their humble best in the matter and keep the flame of humanity alive. What is needed is the active co-operation, service and sacrifice of those that have so far kept themselves aloof from the question, which if sympathetically extended to the cause, will certainly transform the Goshalas and Pinjarapoles into places worthy of the great ideal. Really with such new strength the Goshalas and Pinjarapoles, inefficiently conducted on antiquated lines at present were to modernise their modes of work consistent with their ideal and the change of circumstances, they would be able to give appreciable impetus to the question of improvement of breeds of cattle and development of dairy industry and would save useful cattle from premature slaughter, besides being useful to the people at large. Let us hope that such a change would soon come off and those who criticise the mismanagement of such institutions, will sincerely devote themselves to the cause and its improvement.

In concluding I heartily thank Mr D. H. Jani, for the pains he took in making the book a very useful and authoritative one and trust advocates of the cause of the cow will make the most of it by carefully reading the same and doing something for the cause. I also thank the committee of Shri Gogras Goyidan Mandal for their generous partnership in the expenses of the publication.

I very much appreciate the co-operation of Mr. S. K. Patil, Managing Director, Associated Advertisers and Printers Ltd, who has spared no pains in bringing out the book as decently as possible and for other facilities given to complete the publication.

While the book was in the Press we accidentally got into touch with the well known artist Mr. Hari Lal who is proficient in explaining spiritual matters





PREFACE

Thank God that the year nineteen hundred and thirty eight shall pass down to posterity as the beginning of an auspicious era in the cattle history of India. It is this year which chronicles the nation's wish for the exclusive use of "lacto-products of the Cow", during the forthcoming session of the Indian National Congress at Haripura.

Thanks to Mahatma Gandhi's bold and timely espousal of the cow cause, India promises to bring the cow once again into her own. It is now just appropriate for the cow ameliorators of the land to join hands and work out their problem. As John Bull rose to be a Naval Power through developing her fishery by observing fish day and half a fish day in a week, Uncle Sam rose by abstaining from Alpaca flesh in order to raise Alpaca cloth, and Italy rose by growing Cinchona trees in order to stamp out Malaria, so also India can only rise through her cow by securing nutrition for her humans and manure and draught for her agriculture. Cow amelioration should thus be her national policy in main. Cow's problem is, of course for the crores of India.

If the Nation's foresight and efforts install the cow on the forefront of the cattle stage of India, leaving the buffalo to its long deserved background, the cow can only survive. This is but the only chance which if spurned, India is spurned for ever. The slaughter of the innocents of humanity and cattle shall be progressively diminished and the agrarian prosperity and national longevity shall follow in its wake.

Any amount of ocular demonstrations and oral preachings heretofore has but little effect. Example is only deafeningly eloquent and dazzlingly illuminating. If the exclusive use of the lacto-products of the cow comes into vogue,

ROMANCE OF THE COW

though it may come but very slow, cow is to come into her own. Cow's lacto-products are more healthful and nutritive, yet we have criminally neglected them and treaded on the path of difficulties and dangers. Let us hurry back from the path before we reach the death-point which is but not too far.

Let us trust that the cow has her own future and with the dawn of Swaraja, there shall also dawn the Cow Swaraja, without which perhaps there may not be genuine Poorna Swaraja.

Pure separate milk has its own food value, yet we have not been using it as such, although it is being largely used in the adulteration of wholemilk. We should now learn the separate use of separate milk for saving life and money. Thus may materially advance the Cow Cause.

The least that every Indian owes to himself or herself and to his or her mother country is to introduce into his or her diet the possible amount of cow's hygienic lacto-products in any suitable form, be it even separate milk, butter, milk or whey. Every lacto-product is detoxining to human system and as such offsets deficiencies and corrects mischiefs of their foods.

The Goseva Sangha, under the auspices of Mahatma Gandhi, has shouldered up the responsibility of supplying cow's milk and milk products for the Haripura Congress Session. The Sabarmati Ashram Dairy Farm maintains only cows and supplies about 20 mds. of milk to Ahmedabad. Sjt. Jamnalalji Bajaj is also reported to soon launch a scheme of supplying cow's milk and milk products to the whole of Wardha city under the guidance of Mahatmajī. As a Congress Memorial, a dry stock farm is to be maintained to raise young stock and bulls. The buffalo-ridden Surat District shall pioneer by adding about 500 cows more as its Congress quota. These are but few instances that bear eloquent evidence of what India means to achieve for and through her cow.

It is little wonder that the cross-breeding experiments of the Military Dairies and Government Stations have justly failed to catch the public attention. Though the pure herd of Pusa and other stations have achieved marvellously yet all the cattle wealth developed over there is only like Medas wealth for the public of India. The Viceroy's interest in Bulls may also fail to interest the masses of India. The crores to be spent after village reconstruction work are not spent in real Nation building channels but to add insult to injury are spent after radios and other items of doubtful value and interest to the public. If the Government do mean to serve the Indian interest, it becomes them to work according to the psyche of the Indian people. They may not achieve the popular good as mere patrons. Let us now see what changes are brought about by the new reforms.

Several philanthropic persons are also enthusing themselves for the development of the cow. Some Municipalities and the public bodies as well, are aiding cow amelioration stations by giving grants and other facilities. We have

PREFACE

only to regret that most of the Pinjarapoles are yet very very lukewarm in the matter of reforms and do not shake their manes to throw away their imaginary prejudices and superstitions. It is up to them that they may now modernise themselves if they at all mean to justify their pious existence and worthy mission. It is gratifying to note that there are some exceptional Pinjarapoles and Goshalas taking up the work of cow amelioration, and it is hoped others will soon follow their example.

The Municipalities, Local Boards, and District Boards could and should give more facilities and aids to the rising cause of the cow. Railway companies have yet to show a grateful and thorough change of heart and policy by giving special liberal concessions for the carriage of fodder and cattle and improving their service for scientific and sanitary and safe conveyance of Dairy products. Forest policy also remains to be revised in the interests of cattle starvings. Pasture areas are to be secured. Dairy Farming and cattle raising are also to be scientifically, economically and conscientiously developed as a part of the National policy.

The signs of times do signify an atmosphere of hope and progress. It is now for us to cherish an optimism which knows no failures and apply ourselves to the cow cause, having its own patent, potent advantages in the realm of nutrition, economy, industry, political self-expression and national crystallization. One has only to find out what one has got to do and he has to do it. One may not shirk one's work as a last resort of a fatalist. That is all, and our work is half done. Like Khaddar, cow keeping may supplement upto another 25% to the farm produce, besides building the run down land. Every improved cow easily means an addition of Rs. 30 net minimum. It is a problem of 2000 million rupees gain to the country. How can India neglect this?

The manuscript of the present treatise had almost directly to be typed out in a fortnight for want of time and were retouched in another fortnight's leisure after five years. It is, therefore, but quite likely that work might have suffered in accuracy and elegance. The author cordially invites suggestions and criticisms that may be useful for the next edition. The present attempt is a pure labour of love. The Author is highly thankful to the Bombay Humanitarian League and the Gogras Gopivadan Mandal for publishing the book in a fond and fastidious manner. The President of the League Dayalankar Sheth Lallubhai D. Jhaveri, the pioneer of organised humanitarian movement in India and the Secretaries of both the Societies have really highly obliged the Author by liberally spending for the blocks and the plates. The author also thanks Mr. J. N. Mankar, Assistant Secretary of the League and the staff for carefully supervising the printing and assisting in enriching the quality and get up of the Book. He is also grateful to Messrs. Thakur and Nagamani and the staff of the Press for their co-operation and service.

The Author expresses his highest thanks to the Authorities for the facts and figures cited in the Book without which it might make perhaps a dull reading.

ROMANCE OF THE COW

It is gratifying to note that the book is concurrently released in the year when the practical projects are being released by the Worthies of the land. It is trusted that the Cow cause thus taken up shall gather momentum and shall not suffer sad set-backs, but the rising tide shall go on ever rising till the water mark of cow amelioration is reached.

The Author shall be happy if the book shall throw even a dim streak of light on the onward march to cow emancipation and amelioration. He shall feel happier to see it pass through Hindi and Gujrati editions. He, for the time, offers apologies for this his attempt in English if he should.

It is finally trusted that the "Romance of The Cow" shall awaken some real sense of romance for the cow and its readers shall not rest content with the Inky Romance but shall strive to contribute their mite one way or the other towards building a Milky Romance to make India once again a land of milk and honey. Let us remember that the ration maketh a Nation—as the ration so the Nation. Full ration Swaraja is the only H. C. F. of Poorna Swaraja. The 'cow yields us lacto foods and vegetarian foods. She is a multiple blessing to India. So we rise and fall with the cow. Amen.

23-6-37

Wadhwan City.

*Dharma through Ages
or Gaits of Virtue*



*Rhythmic Gait
In Krita Age*



*Falling Gait
In Dwapar Age*



*Tottering Gait
in Treta Age*



*No Gait
In Kali Age.*

CHAPTER I

COW IN ARYAN COSMOLOGY

India's Passion for Religion.

Symbiosis of Life.

An Introspect.

Cultural Trinity.

Yug Dharma.



POTENTIALITIES OF KAMDHENU

The cow from whom all plenty flows.
Obedient to their saintly Lord,
Foods to suit each taste outpoured,
Honey she gave, and, roasted grain,
Mead with sweet flowers, and sugarcane,
Each beaverage of flavor rare,
And food of every sort were there:
Hills of hot rice, & sweetened cakes,
And curled milk, and soup in lakes,
Vast breakers flowing to the brim,
With sugared milk prepared for him,
And dainty sweet-meats deftly made,
Before Hermit's guests were laid.

—RAMAYANA

— o —

The Mother Cow must wear a lowering look
Sourheaded, strongly necked to bear the yoke ;
Her double dewlap from her chin descends,
And at her thighs the ponderous burden ends.
Long as her sides and large, her limbs are great,
Rough are her ears, and broad her horny feet.
Her color shining black, but flecked with white ;
She tosses from the yoke . provokes the fight
She rises in her gait, is free from fears,
And in her eyes a bull's resemblance bears
Her ample forehead with a star is crowned
And with her length of tail she sweeps the
ground, Lofty-necked ,
Sharp-headed, barrel-bodied, loaded backed
Brawny her chest and deep.

—Dryden's Virgil's—Georgics Bk III

COW IN ARYAN COSMOLOGY



INDIA'S PASSION FOR RELIGION

India is predominantly and temperamentally a religious country. Its religious fervour, its love of the abstract, its subtilizing attitude and its philosophical propensities are proverbial. It is so deeply engrossed in religion and it has so marvellously identified itself with it that Prof. Maxmuller had to observe in one place that India eats, drinks, sleeps, thinks and acts religion. He meant thereby that, in every walk and department of life, India has singularly invested itself with religion

India has so to say, religionised itself in all the aspects and phases of life. It cannot divorce nor divest itself of it even in matters great or small. Described in pedagogical or engineering terminology, we could say that, India had made of Religion, a paramount Project of Life. All Indian life was pivoted on religion, Indians were, so to say, tied to the apron strings of religion. India lived a life concentric with religion at its centre.

Every secular or mundane matter of life had been subserved to religion so much so that, Religion ruled supreme throughout the length and breadth of the country for centuries together, and the custodians of religion held on the keys in their own hands. The very psychology of the people and the Geoeconomic forces that shaped it, have conspired to make India the Throne of Religions.

East is reputed to be the cradle place of all religions chiefly because, India had had the luck of acting as God Mother to all the religions of the world, and tend them and lend them its best in that capacity. By all means, it has been the Fountainhead of all the religions either extinct or extant. They were fifth or sixth hand edition of Ancient Indian Religion

That renowned ancient religion was crystallized in the sylvan asylums of seers and saints of yore, popularly styled as Rishis. It was these holy headed and grey bearded savants whose keen insight, clear outlook, deep love, and incessant meditations and musings conceived the codes and visualised the beauties of life beyond the gross, and interpreted the laws of the working of the Soul and

ROMANCE OF THE COW

its Salvation. Therethrough they expounded the unity and essence of Life in the external diversity and multiplicity.

They ruled Cosmos of the subtler life out of the chaos of the lower. In fine, they gave a vision to the nation ; and as a nation with a vision, does not perish, so it has not perished as yet. Although it should be admitted that it has dwindled and deteriorated considerably, yet it lingers and does not perish. Its survival against several buffets and bombardments of foreign powers and foreign ideology is principally due to Religion. India has enjoyed the embalming and rejuvenating charms of religion time and ever. What, in sociology, is described as a phenomenon of Super-organic Evolution—the outcome of environmental and associatory influence of the aggressive alien power over the native leanings has not been so manifest in case of India simply because of its deep-seated religion.

An average Indian is “Incurably Religious” and that too through and through “upto the core” Religion, after all, is a matter of Instinct and Intuition with him, and not an Opiate nor a Palliative. He has hugged it and hugged it to a vice.

SYMBIOSIS OF LIFE

India's Rishis taught it the unity of life among man and others than man, even an insignificant ant, insect or microbe unexcepted. Those seers also discovered the indispensability of animals and plants to mankind ; and consequently both from higher motives of religion, spiritual growth as well as the practical purposes of life such as the maintenance of the body, they foresightedly preached the Gospel of Symbiosis the highest Biological Truth of Interrelations between man and the members of other kingdoms.

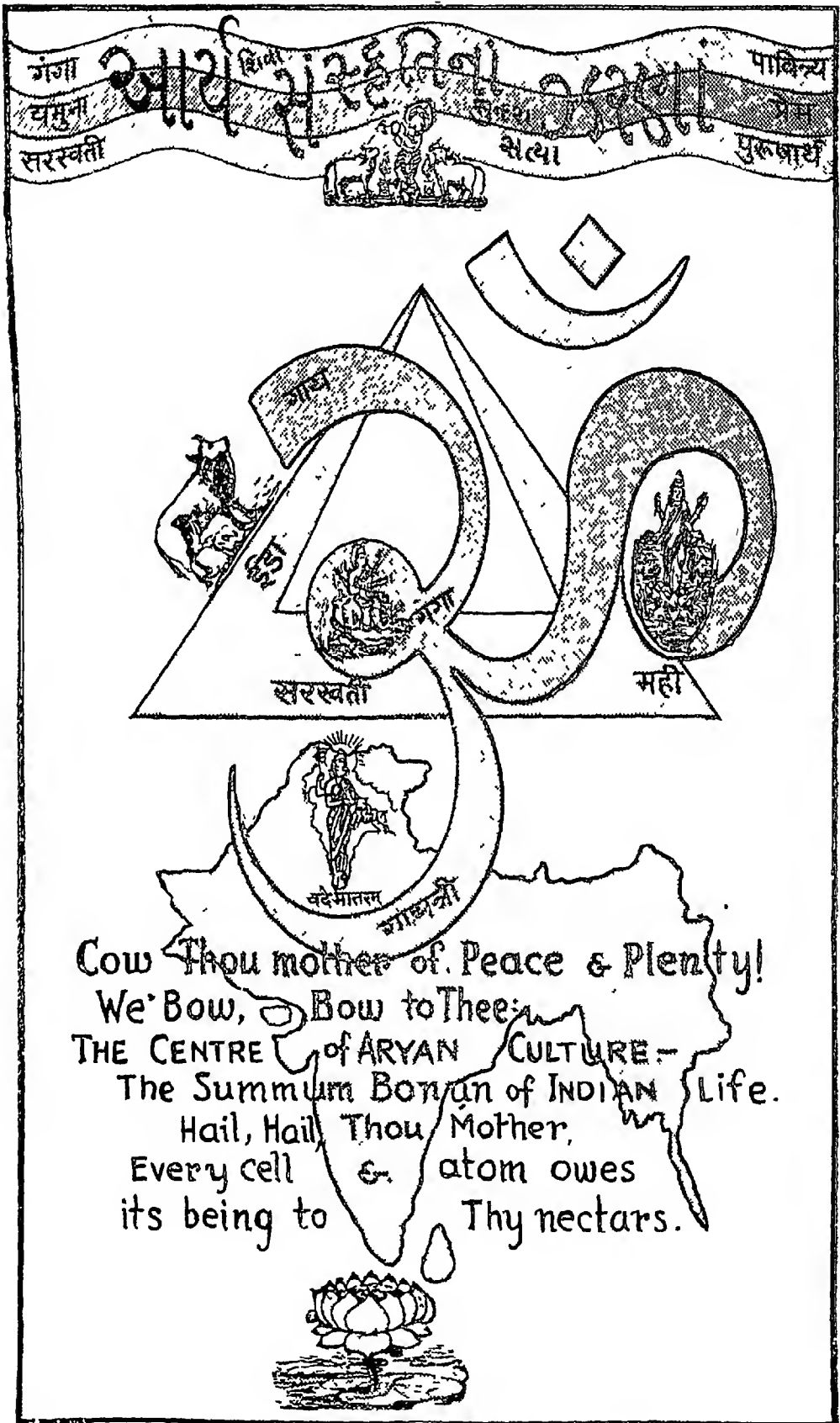
Thus judged from the cultural and utilitarian points alike, the splendid cosmology and code of Aryan life that they have evolved are so sound and sublime they have combined the good and true with the beautiful, the secular with the non-secular, culture with use and service, by wedding the spiritual to the material.

On the basis of Truth they have raised an arch between Good and Beautiful by welding the aesthetic with the ethical. They have linked religion with economy and vice versa. This philosophy of life is quite unique and patent with India. We shall name this doctrine as ‘*Anandvad*’ — Eudomonology — Spiritual Euthenics or Religioeconomics. Any student of comparative economics could see what a terrible and unbridgeable gulf extends between the systems of India and outer world. Rank materialism runs rampant, while India has not given up spiritualism as its national ideal as yet.

AN INTROSPECT

But we must not lose sight of the central fact that Spiritualism of India is not exclusive and absolute. It is not a vacuum in life, but it is a happy wedding

CULTURAL IMPORTANCE OF COW.



COW IN ARYAN COSMOLOGY

of the matter with the spirit. It is matter sublimated and reality idealised. Religio-economic viewpoint was the only predominant viewpoint used in the enunciation of various dogmas and codes.

It is high time for us Indians to view things in and reevaluate them in this light. 'Old order changeth giving place to new.' And we shall soon find us out of the present state of transition. Let us therefore crystallise our views which have lately shrouded and blurred our vision, some how or other.

Without any hesitancy and delay on our part, let us declare from house-top that we have strayed away from the path of our true objective and loitered and loafed so long. Now let us hurry up slowly, and make amends for the past blunders. Narrow vision and myopic policy of life were our glaring blunders.

Rock-bottom foundations of our Religion have saved and sustained us from the onslaught of domineering forces; otherwise like a palace of cards it would have tumbled down before long, like those religions raised in sand. We should be justly proud of such a glorious legacy of wisdom that serves us as a beacon in our voyage amid turbulent and unknown waters of life.

CULTURAL TRINITY

Our Religion — call it Vedic Religion — Ancient Hindu Religion or give it any blessed name you fancy; but one thing is certain that it has come to stay as it deserves to stay. The essence of this illustrious religion is The Trinity of Aryan Culture; *Ida*, *Saraswati*, *Mahi*; Mother Cow; Mother Muse and Mother Earth are the sum total of Indian Culture.

This sacred Trinity is the Summum Bonum of Aryan Civilization. Hindu religion with its present ramifications of sects and *Sampradayas* looks like a labyrinth of rituals and ceremonies of contending 'don'ts and do's. Under this confusing heterogeneity of practices and beliefs there is a subtle and subterranean homogeneity of principles and cults, crystallised in this triumphant Trinity of Ancient Indian Culture. *Gai*, *Ganga*, *Gayatri* is the H. C. F. of Hindu Religion. They form the three sides of the triangle of life. *Gai*, *Ganga*, *Gayatri* is recognised as the Hindu Trinity to-day, but does it not represent *Ida*, *Mahi*, *Saraswati* of the Vedic times?

God with its Universe has been described as Good, True and Beautiful, by Aristotle and *Satyam Sivam Sundaram* by Shankaracharya. Lord's *prakriti*—His creation—is no doubt *Satya Siva Sundara* and it can be represented by *Saraswati*, *Ganga*, *Yamuna*. The perennial flowing and confluence of *Triveni* the happy blending and braiding together of the *Sivam Sundaram Satyam* symbolic of goodness, beauty and truth have sublimated the country.

This life as the Vedas say is a '*Yajna*'—sacrifice and thus confluence of *Triveni*—three waters—is at *Prayag* meaning *Yaga*, *Yajna*, *Yoga*—life is *Prayag*—confluence and sacrifice.

ROMANCE OF THE COW

This Trinity is like the three spears of the Trident *Pinak* of *Pinakpani*—The Lord *Shiva* or *Rudra*—the God of Destruction. India is frequently saved from abysmal pitfalls picked up by His Trident. Or according to another Vedic version, we can say that this Trinity is symbolic of the three tongues of Lord *Varuna* the all pervading and all powerful; and Mother Cow (*Gau*) is its central tongue. He has devoured other countries and cultures in His jaw but India is spared to the extent it has propitiated Him by worshipping the Trinity of His tongues. Not only that, but He has licked India clean and fresh as a cat would lick its kitten.

India has withstood so many ups and downs of life without being perverted and perturbed because of its sound cosmology and not its high sounding theology. Foresight, soundness and far-reaching consequences are the tests of the greatness of a seer and a civilization. Thanks to the insight, foresight, strong commonsense and practical wisdom of these seers, India has earned the most enviable, indomitable, and inscrutable legacy of this highly cherished Trinity.

This Trinity harnesses all the cultural, economic, and social forces and interests of life, to crown it with a towering success. This Trinity is further unified into—*Pranava* 'OM' is the essence of all wisdom. In this single word, nay in a single letter is centralised all the Vedic Lore, theological wisdom and the glorious history of our civilization. 'OM' is charmingly described as '*Pranava*' as it makes and keeps all things fresh and new. Its magic is indeed so rennovating, innovating, and invigorating that it baffles all attempts at comprehending its full implications. In a word '*Neti*'—'*Neti*' is the stage beyond that.

The implications of Aryan Trinity and *Pranava* are teeming with solemn pathos and silent beauty. The deeper we delve into them, and live into their meaning, the more ennobling and ensouling it would be to us and the country at large. It is the Dough of this tough Trinity that shall leaven our life.

If India subscribes to this view, it is upto it that it should work out its renaissance with a redoubled zeal and vigor. It should be then our programme to undeceive ourselves of the wretched beliefs and ulterior conceptions of religion, and hideous and gruesome superstitions that choke all progress. Let us unlearn all old humbugs, throw away the curious hotchpotch of silly and cowardly ideas that haunt us day in, day out, and purge out all religious and humanitarian practices of the sham that darkens them. Let us for God's sake shred the mask of Pseudoreligion and be free and happy. That has blurred our vision, narrowed our outlook, shallowed our interest, and portrayed us quixotic, chimerical and dogmatic, and thereby made us a laughing stock of Universe.

A bold retrospect and an honest introspect of our life would bring into bold relief the fact that we are thoroughly fooled by vested interests. If we are out to be disillusioned and quit the Fool's Paradise full of chimeras and hallucinations of both kinds—Grandiose and Persecutory, and descend down to

COW IN ARYAN COSMOLOGY

the realms of realities to face the world as it is, and get adapted to it in light of our Aryan Ideology, we are only saved, else, we are doomed for ever.

Indian people can no longer afford to play the role of an ostrich. Ostrich policy is although a myth now, yet such a policy is a sheer impolicy that only speeds India to its downward march to runation as before. Let us take stock of all old things, scrutinize and shift and shuffle them. Vouchsafe all wholesome ones by all means and give a good-bye to the wrong ones. *Hanuman* broke open the pearls of the garland one by one, and rejected them one and all as they failed to show him his *Rama* inside.

Under the cloak of bliss and use, things present themselves before us as charming and pleasant but they may be spurious and insidious. The very charm turns into harm; we must disarm ourselves of it. Discrimination between wholesome and otherwise is sadly needed in our land. Liquidate all old misbeliefs, misunderstandings and miseries and set our house in good order once again. It is high time for us to show Courage to destroy and Genius to build. Let us, with a fervour of a youth and foresight of an old veteran launch a truly effective project of life that may revive and freshen our land, out of its Torpor of INACTION and INERTIA.

We are 'narcotised' into stupor by the priestcraft, statecraft, and tradecraft etc. Our country is suffering from Inferiority Complex as a psychologist would have it. *Kumbhkarna* of Inertia and *Ravana* of Materialism are to be vanquished in order to liberate our *Seeta Marya* of Agriculture, and for this tough task we shall have to waken our *Atmaram*, till then there will be no peace.

YUG DHARMA

None is so blind as would not see. He only sees who reads the sign of the time. The law of historic unity is as inevitable as the law of Providence. Historic sense of a people awakens civic sense.

Simple gregariousness is replaced by social solidarity and polity. The nebula of heterogeneous and amorphous masses *Samaj*—a mere congregation of beings settles into a homogeneous class of beings known as society *Samaj*. Such society creates history, and continuity of history as historic unity or National perspective is *Yug Dharma*. It is ecological adaptation of a people to the changing world in consistence and consonance with its principles, temperament and psyche. *Yug Dharma* is not a negation of the past or permanent, nor is it a mere blind-fold repetition. It is adaptation and not adoption of all past, prospective and permanent. To create a perspective by the stroke of imagination and initiative, out of the rich experiences is adaptation or *Yug Dharma*. A people that can create a vision out of its retrospect, introspect and prospect, survives. The fourth dimension of Nature namely time—the Einsteinian Law of Relativity demands of the people certain Timely and Relative

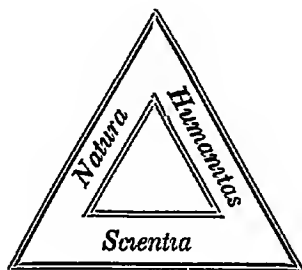
ROMANCE OF THE COW

Reforms; and these constitute Yug Dharma to institute a nation. Present Yug Dharma commands and demands of us to effect certain Reforms in us. Its decrees are inscrutable and unviolable. Adaptation means survival. If you can adapt, survive by all means, if you cannot, then perish. That is the inevitable and unequivocal decree of *Kal Devata*. He who runs may read it Revaluate and reform. Rejuvenate the nation by living out the religion of youth — the Yug Dharma. Youth's religion is revolt — a constructive revolt or say a constructive destruction and vice versa, even though it may sound rather paradoxical. Work out a constructive revolution — a re-evolution.

“ Question, destroy, rebuild ” is Yug Dharma. We have yet to ‘ Agitate, agitate, and agitate ’ as our late-lamented Dadabhai preached us, or we have to ‘ Educate, Unite and Hope ’ as our defunct Emperor King George V advised us in his coronation message to India. Youths are those that are fired with a zeal to reform and to reconstruct. Physical age is no true criterion of youth; only psychological age is the real standard.

Motivate, Activate and Cultivate is the programme to sublimate a vast and variegated nation like the Indian. Let us stand the test and survive.

With this spirit and light, I submit the following for your perusal. Read it, reflect over it and realise it. Do your little mite and wait. This renaissance is a Godsend to us; let us avail of it and justify our existence by acting out our part boldly and cheerfully. Matters shall take good turn. Our ‘ Love, Hope and Faith ’ in our own people would do the rest. Heaven's light may guide us.



CHAPTER II

SPIRITUO-ECONOMICS

Province and Purpose of Religion.

What is Ecoreligion or Spirituo-economics.

Indian National Religion.

Disabilities in the way of India.

Cow in Vedic Religion.

Perpetual cycle of Tap-Bhog-Yajna.

Role in Aryan Cosmology.

Philosophical Aspects and Synonyms, etc

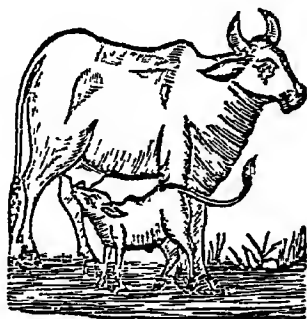
Lord Buddha.

L C M of All Animal Life

Quota of Jainism.

Hindu Attitude.





Cow is a live Epic of India !

She is at once a Poem of Pity, Piety and Piteousness.

It is almost indelibly carved in letters of love,

On the tablet of every Hindu heart and its echo

Reverberates eternally from within asking :—

How India LIVES IF COW DIES ?

How India DIES IF COW LIVES ?



RELIGIOUS STANDPOINT

PROVINCE AND PURPOSE OF RELIGION

India is a wonderful museum of diverse nationalities. It presents an exquisite mosaic of Philosophies and Cultures. But India is a big paradox: it is the richest country with the poorest people in the world. It is an agricultural country without any main or by-industries worth the name and a land of distances.

Religion is a revolt against humbug. Religion is the replacement of evil by good, falsehood by truth, darkness by light and death by life. Religion is to rebind oneself to the soul. Religion is for man and not man for religion. Religion is conducive of Peace, Bliss, and Joy.

Religion — *Dharma* is to hold us—to buoy us up. Its mission is to sustain us. Sustaining in either sense of Physics and Metaphysics: it has to sustain even this physical frame of bone and blood. Viewed in this larger sense religion is not only a theology but a cosmology and within its purview there enters the matters secular also. *Dharma* is not an idle philosophy of subtleties. It is not idle wrangling and jangling of words and tunes. It is an ideal code of applied life and as such it embraces all phases of life.

It has therefore principally to prescribe a code of life just appropriate to the environs of the land. It evolves on the bases of facts—hard facts and actualities. It is not an ephemeral sophistication or a distortion of truth. It is a quest after unalloyed and undiluted Truth.

Goodness, Truth and Beauty is the psyche of life. This Trinity composes life. Life is essentially Truthful, Blissful, and Peaceful. *Satyam Sivam Sundaram*. This doctrine is to be actionalised by a fitting regimen known as Moral Discipline or *Acharam*. Life is a grim and complex reality. It is a huge project. Life is a requisition and religion its execution.

Religion must be pervading, permanent and practical, if life is to be real. The religion that focuses life in all its bearings, becomes a charm; and that disregards it, is a harm.

WHAT IS ECORELIGION OR SPIRITUO-ECONOMICS?

Modus Vivendi et Modus Operandi — Mode of Life and its functioning is guided by Geoeconomic Forces. Thus the religion that aims at complete realisation of life's ideals and the idealisation of its realities must base itself on the very same Geoeconomic forces. This method therefore implies a thorough

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diagnosis of the forces that obtain in the land, and a prognosis and treatment of life according to the observations and experiences.

Religion to be of practical utility, and a Sublimating Expensive Force in life, must assume a Religio-Economic Form. Let us now apply the above truths to Indian Religion. India with its so many nationalities and communities cannot have one religion. It has several of them. But viewed in the above light, one can see that besides having one's personal and communal religion, the land must have one common religion — that is the National Religion respecting the Geo-economic condition of the land. If this one National religion *Samashtri Dharma* comes into operation it may crystallise the colloidal and amorphous mass of dissentient sects, castes and creeds. Awakening of National consciousness in the land, becomes the clearing of the ground for the National Religion — all-embracing and all-pervading Ecoreligion.

The countries of the West are enjoying national peace and prosperity in a general sense, because of their foresight, and dogged persistence of throwing into background their sectional and communal interests, clashes, and contending ideals; and bringing into forefront common national ideals. National Religion or Ecoreligion is supermost in their mind, and it supervenes all other cults, creeds and dogmas. Switzerland and other countries bear testimony to this fact.

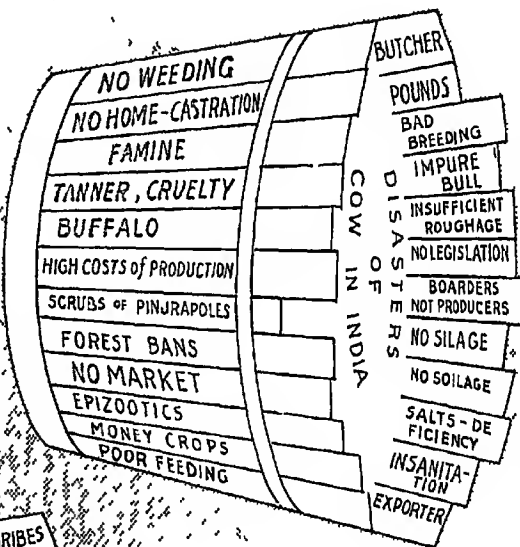
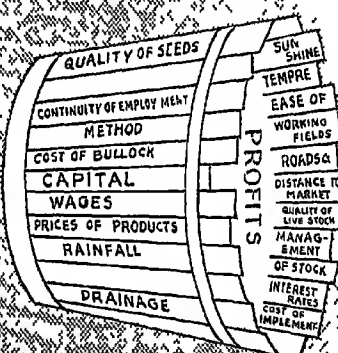
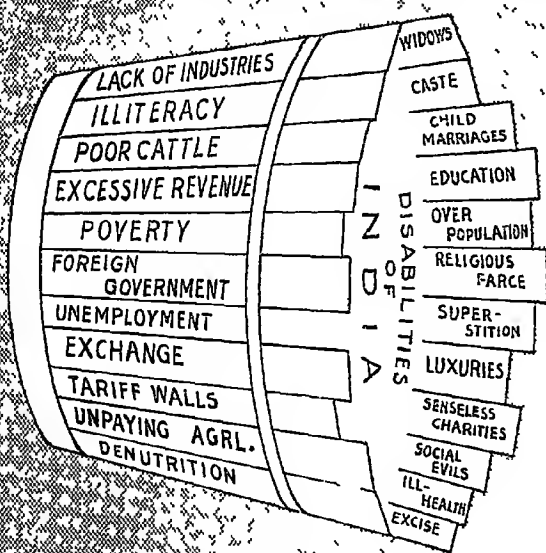
INDIAN NATIONAL RELIGION

It is thus indisputably admitted on all hands that this Ecoreligion-Society's religion or mankind's religion *Manavadharma* must predominate over personal or sectional and communal religions, *Dnyati or Vyaktidharma*. India sadly requires to communize its religion rather than to communalise it. It has been enough communalised! The cup of bitterness is full to the brim. Now, it should communize itself in order to taste the elixir of true love by throwing away the goblet. Then the jargon of communalism shall give place to the music of Religious communism, so that the Harmonium of Life may give out sweet tunes of harmony. Thus done, and the jarring band sounds of Hindus before Mosques and the clashing and thudding sounds of Muhomedans' axe on the cow shall nullify each other in a compromising tone, and the music of harmony and concord, will fill the air. All India will jubilate the triumph of love over hate, understanding over bigotry and orthodoxy.

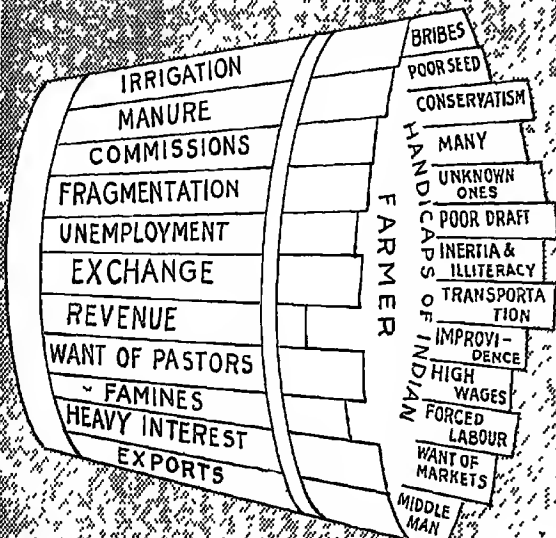
If this change of heart is once achieved, India would be overflowing with Peace, Power and Plenty. The nightmare of spiritual, intellectual, physical, moral and material poverty shall be lifted in a trice. Religion will thus give the best leverage to national upheaval to the pitch of Swaraj, but the fulcrum of heart should be there for that lever of religion to operate, and that heart for the purpose must be pure and powerful.

Ideals of Indian National Idealism should be set afloat, and India shall prosper. In this light no institution, no movement, nothing should and could

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LEAKAGES



GRAPHS

RELIGIOUS STANDPOINT

remain Non-Political on the soil of India. Non-Political institutions and movements bear promise to flourish to the extent and in the manner in which they adopt this outlook and assimilate national idealism. Life is a complex. There are no watertight compartments in it. It is a unity—a solidarity—a mosaic. Every streak of ray must bend into National Spectroscopy. But then there should be a judicious combination of all to create an organic whole. With this preliminary deliberations, let us now hammer out the cattle problem of India on the Anvil of Religion.

DISABILITIES IN THE WAY OF INDIA

India is a land of distances. India is a land of villages. It is a land of overabundant population; last but not the least it is a land of agriculture. Industries it has none. Its capital is shy and not handy and its gold sold off. Markets are unorganised, exchange ratio adverse, tariff walls high and unscalable, transport facilities awkward and primitive, economical currents anti-national and harmful. Thus it is hedged over with countless dangers, difficulties and disabilities. Foreign domination and exploitation are dealing death blows to it. It is 'bleeding' incessantly for years together. It has bled pale. The chances of survival for it are very few, if fresh and vigorous blood is not transfused into its vein. How to replenish the lost and looted treasures of the land is the problem of the day.

ROLE OF CATTLE IN RELIGION

Let us see if cattle can help us out. Can they? Yes by all means, to some extent. This Essay is then a survey of exploring the possibilities and potentialities of cattle wealth.

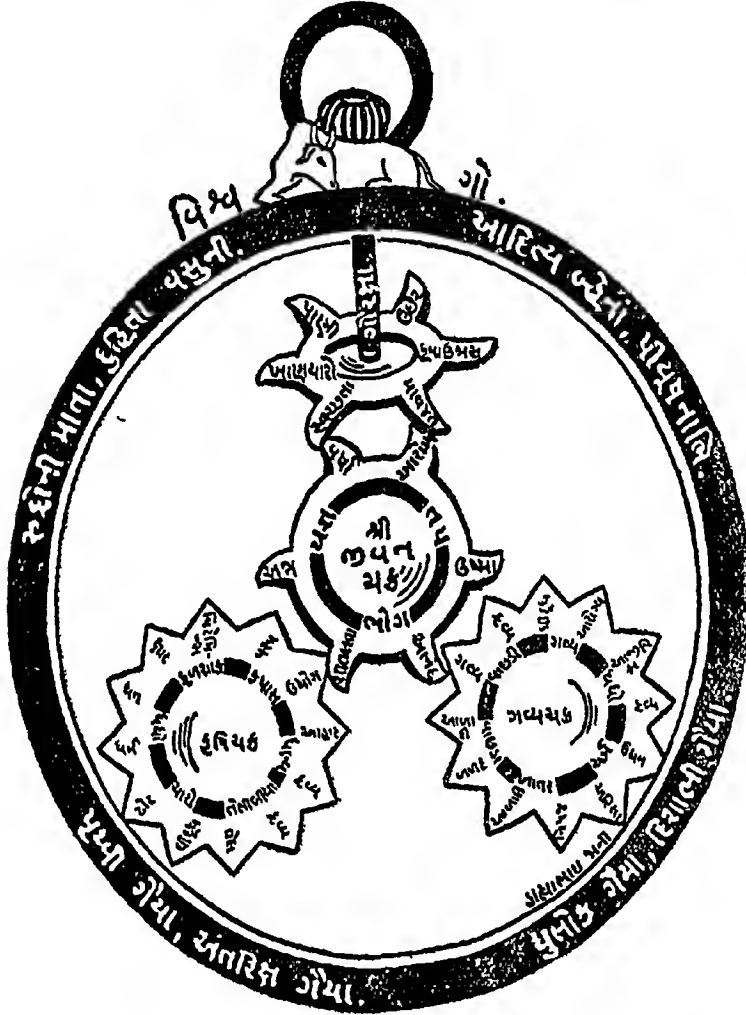
COW IN THE VEDIC RELIGION

Ancient Indian religion known as Vedic or Aryan religion was mightily formulated on the bases of cosmology or spiritual economics. As mentioned above the wisdom and foresight of the propounders of this religion, could not ignore the geoeconomics of the land, and they moulded religion in the cast of agriculture. The Vedic hymnals, rituals, ceremonies and litanies are pregnant with the accounts and allegories of the COW. The Cow is raised to the status of Mother and the bull that of Father. *Gou me Mata Vrushabho Pita me* Cow is almost deified in the Vedic and the Post-Vedic Literature throughout.

Agriculture connotes Draft. Beast is superior to man in point of draft. The ox was found most suitable to the purpose and climate, and the female could be tapped for her milk. The animals whose males yielded food from fields and the females yielded luscious lactoproducts and whose fluid and solid excreta (urine and dung) yielded fertility to the land, must naturally bear the palm.

The cow thus became India's *Kama Dhenu*. It fed the land with manure. The land fed the plant, plant fed man and the animal, the animal also fed man.

CYCLE OF TAPA-BHOGA-YAJNA



Thus the cycle of *Tapa-Bhoga-Yajna* was cast into motion. Man in his turn fed the animal. Animal fed him with secretions and dead relics, and land with excretions. In the alternate cycle land paid its tribute to plant, plant to animal, and animal to man. There was, so to say, splendid Symbiosis among all of them. They could reciprocate, and did not parasitise any of them as at present. (*vide plate*)

YAJNA-CHAKRA PARIVARTANA CYCLE OF SACRIFICE

Man is *Yajna*. He has to keep these cycles into eternal motion. And that is *Yajna*. It does not necessarily imply *Ghee* and *Fire* Sacrifices. Sacrifice connotes any disinterested service in recognition of usefulness of an agency.

Man—his soul *Kratuhu* is known as *Kratu*—meaning Action, not Inaction, doing and not undoing. He himself is a *Shatkratu*—Hundred Sacrifices of Hundred Cycles lasting Hundred Years.

If man is *Yajan*—Sacrifice ; then cow is the chief agency of *Yajna*. Both the cycles of *Tapa-Bhog*--Employment-enjoyment as also of *Yajna-Sacrifice*--the Alternating Cycle, can afford to revolve as if in a 'Perpetual Motion' through the good graces of COW.

COW'S BRILLIANT ROLE IN ARYAN COSMOLOGY

It is therefore small wonder that the cow should figure marvellously in the History of *Aryavarta*, through her performance in the Prehistoric and Prevedic times. As the nebular conditions of the land settled, and the civilization dawned over the horizon of the land, quite naturally it simultaneously dawned over the mental horizon of Seers—the Rishis. These formulators of religion or civilization got a vision of the immense potentialities and mighty possibilities of the cow, and deified her.

They offered their heartfelt tribute and gave an adequate expression through *Gomedhas*—Cow—Adoration (Pt Satavlekar's Contention) *Gosuktas*, and Hymns. From the Vedic Index of MacDonell, the writer had, on one occasion, culled as many as 487 references to Cow. In all the Vedas, Brahman Granthas, Dharma Shastras, *Neeti* Granthas, and other historical and scriptural texts one is overwhelmed with glorious references to Mother Cow.

Bull was equally sacred and honored. He was the Seat of Lord Shiva—the *Pashupati*. It being reckoned as the sole representative of all *Pashu* kind. The institution of *Nilotsarga* popularly known as a Brahman Bull was consecrated, and all dedicated to Him. This Brahman Bull was the darling among all and enjoyed as a free animal. All rights of free grazing and free trespass were reserved unto him as, it was he who served as a lusty Stud Bull for the locality. This institution is current in its distorted form even to day. Donating a bull was more meritorious than donating a cow. Zorostricism gave a higher status to him than the cow. His name was *Nandi*—the delightful

VEDIC RELIGION SYNONYMOUS TO YAJNA

Cow is the centre of *Yajna*. She is the Fountain of nectar. She is described '*Amritabhā*'. She was the source of Sacrifice, if not the sacrifice itself. Man—*Yajak* is indirect cause (*Nimitta Karan*) and Cow—direct cause (*Upadan Karan*) of *Yajna*.

'No Cow, no sacrifice. No sacrifice no rain. No rain no food. No food no life'. Thus Cow is the axis on which man revolved the cycle of sacrifice (*Yajna Chakra*).

Dhenurloka mataram 'Cow the Mother of the land (globe).'

'Sacrifices depend on Cows.'

'Cows are the Life and Livelihood of people.'

'Cows—the Revivers and Renovators of Land and People.'

'Cows are source of Nectar'

Do not such terse and pithy sayings from the religious texts shed floods of light over the Cow problem? She is deified as the mother of Lord Destructor—*Rudra*, daughter of *Vasu*—the fulfiller, sister of the sun—*Aditya*—the nourisher (*Pooshan*), and the fount of milk. She enjoyed equal status with the Brahmins. She is Nutrition of the body, mind and intellect, and of spirit—soul—directly through being a fitting object of worship, service and kindness etc., towards her in particular and animal kingdom in general, and indirectly by goading the soul to the higher flights of life by enabling and inspiring man to turn his life an eternal live Sacrifice.

Domestic animals also educate and refine mankind in return. Cow represents the animal kingdom at large, Mahatmaji describes :—

'COW IS A POEM OF PITY.'

Can we not in the same breath of admiration, adoration and supplication add :—

COW IS A LIVE EPIC OF INDIA,

Even though she is a poem. Or to complete the picture it should be designated that,

COW IS AT ONCE A POEM OF PITY, PIETY, AND PITEOUSNESS !

It is most indelibly carved in letters of Love on the tablet of every Hindu heart—and its echo reverberates eternally from within asking.—

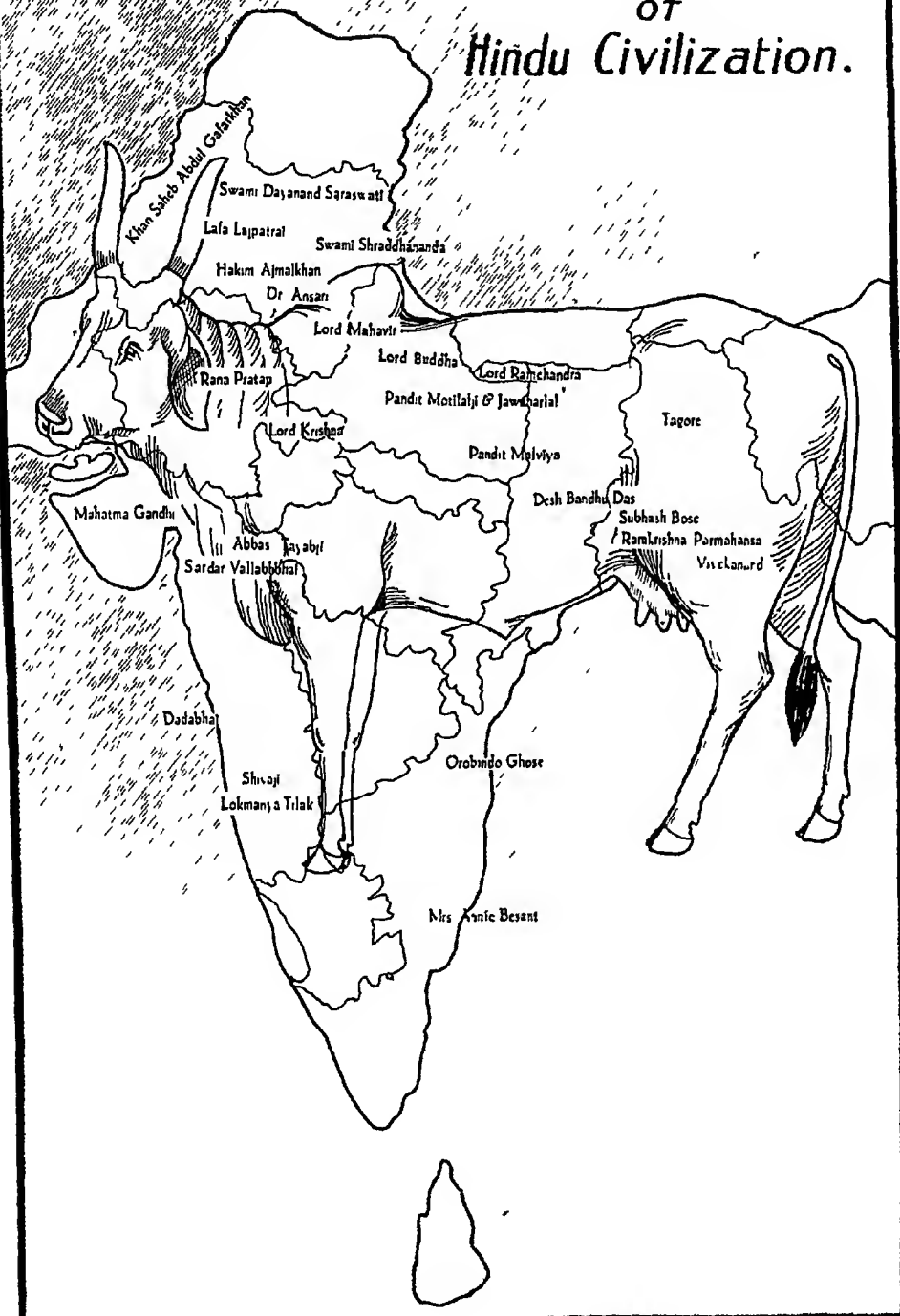
How India Lives If COW Dies? How India Dies If COW Lives?

There are truisms and axioms which don't go straight to the heart, because they are so simple. The cynical, sceptical and the falterers and the chronic doubters require flashlights of economy, biology and dietetics to understand the problem of the Cow in all its bearings, let us however postpone it to future chapter. Meanwhile let us discuss the issue at hand.

While exploring, ransacking and gleaning all the numerous scriptural texts, we are overwhelmed with splendid and spirited accounts of Mother Cow. All the conceivable moral and material progress of the country was pivoted on

COW

*The Fountainhead
of
Hindu Civilization.*



RELIGIOUS STANDPOINT

the Cow. Eulogia that are showered over her, in gratitude, form the proud and legitimate legacy of the ancient Aryan Lore. Arya means accessible, adorable and also tillers. Aryans were a people of cultivators : hence such an exalted status of the Cow in Aryavarta.

PHILOSOPHICAL ASPECTS OF THE COW

The terminology, allegory, and accounts that occur in the Aryan scriptures are construed in three senses — Physical (*Adhibhautic*) Supernatural (*Adhidaimic*) and metaphysical — Spiritual (*Adhyatmic*). This triple purposiveness of terms and allusions beautifies the study of Vedas and deepens one's interest and heightens one's admiration to the pitch of adoration.

Even the Rishis like Yajnavalkya, and a legion of them, were cultivators and cow-keepers. The very word Arya means the latter. Kings like Janaka and Dileep and such other Rajarshis cultivated land and kept cows. Lord Krishna is the Cow-God according to Hindu Mythology. Krishna means *Karshak* the cultivator, attractor and controller. His elder brother Balbadra means whose strength is well-meaning. He was *Haldhar* the bearer of the plough.

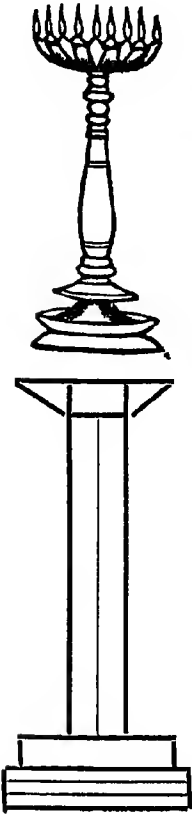
Even Lava and Kusha the twins of Rama and Seeta mean the switch of the tail and *Kusha* grass indicating the pastor and a cultivator respectively. And even to-day the *Leva* and *Kadwa Patidars* of Gujarat claim their descent from Lava and Kusha respectively and quite aptly the cattle wealth is more developed by the former.

Even the very name of Seeta signifies the ploughshare. Seeta is a symbol of moral and material progress and prosperity. She is the daughter of mother earth. Thus it signifies that India's prosperity shall be born from the earth and by the ploughshare, that is, agriculture.

SYNONYMS OF COW IN SANSKRIT

'Go' means Cow on the physical plane, *Indriya* in the metaphysical sense, and Ray in the elemental or supernatural sense. People of any predilection of mind, could conjure with this 'Go'. All found a veritable mine of meaning capable of expansion, according to their evolution. A cursory glance at the Sanskrit equivalents for the Cow occurring in the realm of scriptural literature and lexicographical mines as *Niruktas* etc., fills our eye with a sort of soothing resplendence of its own.

'Surbhi':—fragrance as come out of the erection of *Prajapati* — the Lord of the beings on quaffing nectar. From this, one may conjecture why its genuine lactoproducts — taste nectar like. It also means vaccine excreta, as it smells peculiarly sweet. Mata : Mother, One is valued by his mother (*Mecyate anena iti*) we and our civilization are valued by the Cow.



Aghanya : undeserving to be killed.

Rohini : as it progresses. Cow is the most responsive animal in point of performance.

Mahendri : great Goddess ; Indrani — the Goddess of Gods — the power of soul.

Eejya and *Eeda* : Adorable.

Dodhri : mild yielding.

Kalyani and *Bhadra* : Gentle and well-meaning, welfare itself.

Dhenu : bearer of milk etc. Same as Dharma itself.

Bhoorimah : most venerable.

Pavani : purifier, refiner.

Maha : The great.

Bahula : copious and abundant in milk.

Aditi . mother of Aditya — sun, or not deserving to be killed.

Jagatee : progressive, world incarnate.

Sharkari : full of lactose.

Shatoudana : yielding milk sufficient for 100 men's rice pudding.

Ranta : delightful.

*Kamy*a : loveable ; amiable.

Jyoti : shining.

Vishruti : most glorious.

Hayya : adorable.

Chandra : splendid.

Sarsvati : full of sap.

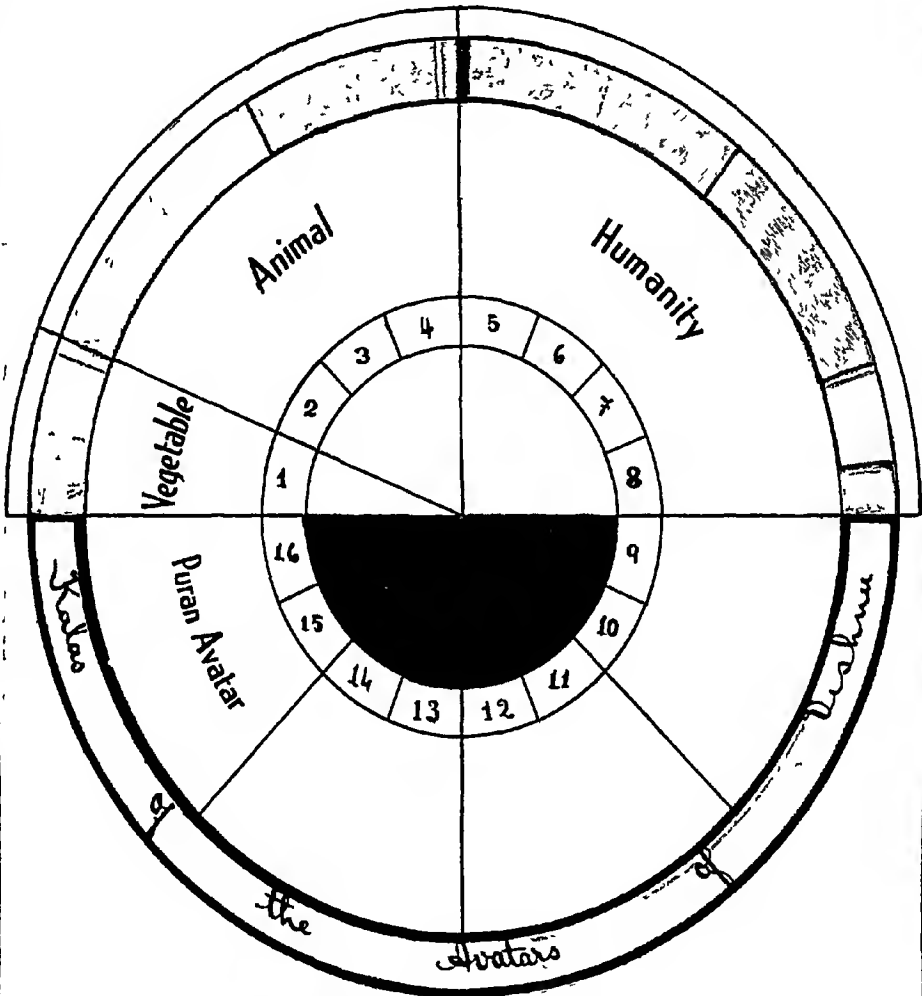
Vasha : docile.

There are so many synonyms for the Cow, but we shall satisfy ourselves with mentioning the above few.






Special considerations are seen to be made in case of the Cow in every walk of life, regarding its treatment, rights, privileges, rituals, distributions, pastures, feeding, attitude, breeding, theft, trespass, etc. etc. as observed as late as in Kautilya's *Artha Shashtra*.



Lord of Universe Manifests Himself in 16 Kalas.



Reference to Shades

HUMANITY	ANIMAL	VEGETABLE	1		Anamaya - Kosh	} Manomaya-Kosh	} Suksham-Sharir
			2		Prana-maya-Kosh		
			3		Kam-Dev		
			4		Lower-Mind		
			5		Karan - Sharir		

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B H LEAGUE

HARI LAL

For Explanation See Page 234-235

CHAPTER III

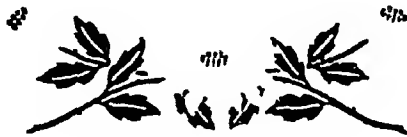
COW IN ARYAN COSMOLOGY

Lord Buddha.

L C. M of All Animal Life

Quota of Jainism

Hindu Attitude.



LORD BUDDHA



No living thing he harmed,
by hand or by scourge,
By clod, by sword, by any
murderous death
By bonds or threats, no
injury he wrought
Therefore in blissful borne,
he reaped the fruit
Of happiness, found happy
things for deeds
Where divers goats and
sheep and kine are slain,
Never to such a rite as
that repair
The noble seers who walk
the perfect way.

—SAMYAKTA

If he who kills is counted innocent,

Let Brahmins Brahmins kill .
We see no cattle asking to be slain
That they a new and better life may gain,
Rather they go unwilling to their death,
And in vain struggles yield their last breath
To veil the post, the victim and the blow,
The Brahmins let their choicest rhetoric flow.

These cruel Cheats, as ignorant as vile,
Weave their long frauds the innocent to beguile.

—JATAK Vol VI, No 543.

I lay no wood, Brahmin, for fires on Altars,
Only within, beneath the fire I kindle.
Even my fire burns; ever tense and ardent,
I Arhant, work out the life that is holy.

... .. The heart's the altar,
The fire thereon, this is man's self well trained

—SAMYUKTA SUTTA i 169

L. C. M. OF ALL ANIMAL LIFE

*To no other animal has mankind owed so much and the
debt richly repaid with a veneration unknown in other
lands. So important a factor has the Cow proved
in Indian life and thought, that an exhaus-
sive account of her influence from
the earliest times of the world
would form a noteworthy chap-
ter in the history of
Civilization.*

DR. A. A. MACDONNELL.

We have taken the Cow as the sole representative of all animal life, or to say in mathematical terminology one can say that Cow was the L. C. M. of all life on earth. Cow-worship, Cow-keeping and Cow-protection were the three stages and uses through which mother Cow has oscillated from time to time. Aryan religion mainly degraded into *Tantric* (post Vedic) religion and Cow slaughter came into occasional vogue. In the (*Uttara Vēdi Yajna Samsthā*) *Yajna* Cow began to be sacrificed. Meantime Lord Buddha and Mahavir sprang into eminence and purged the debased and defaced religion of the land of its impurity of *Hinsa* — Killing, and revigorated the religion of the land. In the mediæval India of Ramayana and Mahabharata killing for sacrifice was endemic and exceptional. King Ashoka, and a few other Hindu kings aggressively worked for the betterment of the Cow.

QUOTA OF JAINISM IN RESTORING AHINSA



Jainism has added the most brilliant chapter in non-killing—*Ahinsa* in the history of Cow protection in India amongst Hindus. Critically speaking, Jainism, Buddhism and Sikhism, each has played its role in Cow-protection in its own way. Zorostranism in form of legends, theories and practices has equally beautifully played its part. Mohomedan kings like Baber, Akbar and even Aurangzeb unexcepted, have laid very great stress on non-killing or sparingly killing the Cow, if not all out of conviction and principle like Akbar, at least out of convenience and policy of befriending the Hindus and enlisting

their sympathy, as also not ruining Agriculture therethrough.

Cow problem among Hindus has thus uniformly been one of protection. Only for sometime some sections had gravitated towards killing even cows for sacrifices and table to treat the guests on some nuptials and obsequial occasions. In this context, perhaps it would not be out of place, to sound a warning that, western scholars like Maxmuller, Paul, Deusion, Buhler, MacDonell, Smith and others have blundered in interpreting and ascribing killing practice out of place and context. Following in their footsteps, as well independently, oriental scholars like Dr Rajendralal Mitra¹, Profs Rajivade, Dhruv, C. V. Vaidya² and others have arrived at the same conclusion as against Pandit Satavlekar and other Aryan Scholars.

It is not in the scope of this monograph to explode or explore this question. For this, one may refer to the writer's treatise on 'Goraksha' in Gujarati. But what he wants to emphasise is to declare that, the question remains open to discussion and decision.

Prof. Belvelkar opines that there should be only a class of cows that might be sacrificed; while Prof Shreepad Damodar³ Satavlekar a Vedic scholar of great erudition has written volumes in contradiction of killing theory in reply

१ मास मीमासा (साहित्यपरिषद् मुद्रकुल कागडी)

२ Riddle of Rāmāyaṇa, Epic India & Medieval India (C V Vaidya)

३ वैदिक पशुयज्ञ मीमासा (प्रो विश्वनाथ)

३ गो मेघ (वैदिक यज्ञ संस्था भाग १-२)

to Sjt. C. V. Vaidya and others. His books on Gomedha and Yajna Sanstha are pregnant with his scholarship and fervour. Mahatmaji pins his faith in the non-killing theory of Vedas, by leaning towards Satavlekar's findings. In all frankness it should however, be admitted that only upstart section of reformers among Hindus take beef. It is sad to note that this is but an outcome of western views in them. But leaving cow, the goat, the sheep and the fowl etc. are eaten by the low caste Hindus and some of the caste Hindu reformers also. About half the Hindu section is computed to be non-vegetarian. Sikhs, Buddhists, and Zorostrians as a class are taking flesh food now-a-days. It is a sad perversion of ideals in the latter two.

Once the Aryans sacrificed their all for the cow, and when perversion overtook them, they sacrificed the cow for sacrifice. History of killing brings one fact in prominence that killing begins and associates with sacrifices: never mind they may be Yajna of the 'Uttarvedi' type of the latter sacerdotal age and the Tantrikas, and Hindus, or as Kurbanı or Halah by our Mohomedan brethren.

Numerous Hindus even to-day sacrifice goats, he-buffaloes, hens etc., if not the cow. And this is perpetrated in the name of religion! Should this be then true religion, or pseudo-religion? Is it not last of the infirmities? When shall this bulk of humanity realise the futility of this? The inner meaning of the goat, and the buffalo is one's own Ignorance, and Conceit, and they are to be sacrificed. (Garga Sanhita edited by Dr. Bhagvandas)

THE HINDU ATTITUDE TOWARDS THE COW



Swami Dayananda

The superb attitude of the Hindus towards the cow could be no better described than by summing up Sir Monier-Williams. Let us quote him as under :-

“ In the forefront must be placed the worship of the Cow and the Bull. The utility of the cow as a source of nourishment to a people who never kill animals for food, and of the ox and the bull to the agriculturists who have no cart horses for draft, is manifest. The cow of all animals is the most sacred.

Every part of its body is inhabited by some deity or other. Every hair on its body is Inviolable. All its excreta is hallowed; not a particle ought to be thrown away as impure. On the contrary, the water it ejects ought to be preserved as the best of holy waters — a semi-destroying liquid — which sanctified everything, it touched, while nothing purifies like the cow-dung.

Any spot which the cow has condescended to honour with the sacred deposit of her excrement is for ever afterwards consecrated ground, and the filthiest place plastered with it is at once cleansed and freed from pollution, while the ashes produced by burning this hallowed substance are of such a holy nature that they not only make clean all material things, however previously unclean, but have only to be sprinkled over a sinner to convert him into a Saint.

In the urine of the cow dwelves the Ganges, Prosperity in dust of her hoof, Good fortune in cow-dung, and virtue in saluting them. Therefore they should be constantly saluted.”

COW IS A POEM OF PITY.

COW IS A LIVE EPIC OF INDIA.



Mahatma Gandhi

CHAPTER IV

ISLAMIC OUTLOOK & ATTITUDE

Baber's Secret Will.

Akbar's Generosity.

Akbarshah's Firmans.

Bakra Id and Killing of Cows.

The Muslim Outlook : Ajmal Khan's Views.

Causes of Indian Disruption.



ISLAMIC OUTLOOK & ATTITUDE

The earth rests on one of the horns of the Cow.

(Islamic Tradition).

The cause of Islam can be more promoted by the sword of OBLIGATIONS than by the sword of Tyranny—BABAR in his will.

It is Bakra Id not Baqura Id. It is bakra (be, kaf, re, alef,) meaning goat and not Baqura (be, quaf, re, alef,—Bakra) meaning Cow in Al Quoran—Islamic Scholars.

Cow's milk is the chief cause of recovery and health
Ghee is a medicine and beef is a disease. Cow's milk is
the means to cure diseases. Butter is the medicine, flesh
is the disease.

PROPHET to AYESHA.



SECRET WILL OF BADSHAH BABAR TO PRINCE HUMAYUN

*‘ Oh son, the kingdom of India is full of different religions Praised be the GOD that He bestowed upon thee its sovereignty. It is incumbent on thee to wipe all religious prejudices off the tablet of the heart, administer justice according to the ways of every religion. Avoid especially the sacrifice of the cow by which thou canst capture the hearts of the peoples of India, and subjects of this country may be bound up with royal obligations ’

‘ Do not run the temples and shrines of any community which are obeying the laws of government. Administer justice in such a manner that the king be pleased with the subjects and the subjects with the king. **THE CAUSE OF ISLAM CAN BE MORE PROMOTED BY THE SWORD OF OBLIGATIONS THAN BY THE SWORD OF TYRANNY.**’



Badshah Babar



Prince Humayun.

‘ Overlook the dissensions of the Shias and Sunnis, else the weakness of Islam will manifest. And let the subjects of different beliefs be harmonised in conformity with the four elements (of which) the human body is harmoniously composed, so that the body of the kingdom may be free from different diseases. The Memoirs of Timur, the master of conjunction (i.e. Fortune) should always be before thine eye, so that thou mayst become experienced in the affairs of administration ’

—1st. Jamad-ul Awal, 935 A H —

* (From the article of Dr Syed Mahmud, Ph. D. who obtained a Facsimile copy of the said will, preserved in the Bhopal State Library and Translated it in his article ‘ Cow Protection under Muslim Rule—A Historical Survey ’ published by the Bombay Humanitarian League.)

AKBAR'S GENEROSITY

Badshah Akbar was an eclectic and showed strong leanings towards Hinduism. His instinct of humanitarianism was as strong as a Jain. The following passage from the *Ain-I-Akbari* will amply testify it

It describes that His Majesty had a great disinclination for flesh, and he frequently says, 'Providence has prepared variety of food for man, but through ignorance and gluttony, he destroys living creatures, and makes his body a tomb for beasts. If I were not a king, I would leave off eating flesh at once, and now it is my intention to quit it by degrees.' For sometime he abstained from flesh on Fridays; then on Sundays; and now on the days of the eclipses of the sun and of the moon, and the day between two Sufyanehs; and the Mondays of the month Rajeb, and the festival of the month Teer, together with the whole of the month Fervirdeen, and the month of his birth (Aban). It was ordered that Sufyaneh should last as many days as he was years old.



Emperor Akbar

THE FIRMAN OF JELLALUDIN MUHAMMAD AKBAR SHAH

"Granted to the Jains in guaranteeing the Rights of Worship and the exercise of their Religion and doctrine throughout our Empire and Dominions. No one can kill an animal on those mountains of Shantrunjaya in the Palitana State in Kathiavar. It is but proper that the Jain should perform his devotions with composure of heart. Let no one ever oppose or make objection to the decree. Let the orders contained in the Firman be acted upon and carried out."

The second Edict is from the Emperor Jehangir in similar terms.



Shahjahan

The third Firman is from Shahjahan who confirms the preceding documents. Then we have another granting greater liberty. He emphasises that every year a new order shall not be demanded but that those whom it concerns shall not swerve from what is here commanded.

According to Islamic Gorakshan, later Mughal sovereigns of India such as Muhammad Shah and Shah Alam prohibited cow slaughter.

(Travels in the Mogul Empire, Bernier)

All the foregoing account vividly shows as to how careful even the mighty Mogul sovereigns were in not hurting feelings of Hindus.



BAKRA-ID & KILLING OF COWS



Our Islami brethren sacrifice all sorts of cattle and life except pigs. Cow they sacrifice, more out of vengeance, and provocation *Al Kuran* does not enjoin the killing of the cow on *Ids*. Cow is not indispensable to kill on religious grounds at all. Moreover the word cow does not occur except once and that too, not in the context and reference of killing. It keeps mum altogether. It appears to be almost lukewarm. Cow was a rarity in the desert land of Arabia — the birthplace of Islam. Even *Paigamber Saheb* and many other important personages have abstained from taking beef, if not all sort of flesh. They have preached against and prohibited the killing of useful animals. Mohomedanism out of India is more ancient, and more true to type and genuine, even then there is no such practice of killing cows. In the history of *Kurbani*, cow sacrifice does not occur so much. Goats, sheep, camels, etc are sacrificed but not the cows. The late lamented *Hakim Ajmal Khan*, M Chhotani, Moulana Abdul Bari and other luminaries of Islam repudiated the claims of fanatic section of Islam, about the indispensability of cow slaughter. *Hakim Saheb's* notes are too emphatic and unequivocal.

Only to provoke the wrath of Sikhs and Hindus, and to wound their feelings, Muhomedan conquerors, in the dark ages, inflicted this insulting and arrogant practice of cow killing. It appears profane and wanton to the enlightened Muhomedans when they view this practice in the perspective of history and also from the national standpoint or say Ecoreligion as the writer calls it.

Let us hope that our Muhomedan brethren shall get insight into the matter and use their empathy to grasp the Hindu viewpoint and read their mind and show their sympathy towards Hindus to receive doublefold sympathies of the Hindus in return. Let us wait for the day, when our Muhomedan brethren shall give up killing of cows which is religiously redundant, socially alienating and insulting, humanitarially wanton, and economically and nationally costly and painful.

But we Hindus are also not less blameworthy. Our playing of bands near mosques has not straightened them or is likely to, looking to the short temperament and shortsightedness. If we want to wean them of this practice, we shall have to win them through persuasion, spirit of tolerance and fellowship. It should not escape our notice that we cannot save the cow from them unless they want to. We must therefore quite logically create a situation wherein they may cease from this practice. But we Hindus are an impatient lot of people. From numerical point of view the cows that succumb to the Muhomedans' axe in *Kurbani* are few; but it is everyday slaughter that counts. Slaughter house takes its toll more than thousand times the total religious slaughter.

ROMANCE OF THE COW

Dr. Leitner in Asiatic Review 1893, explained the fallacy as under :—

Bakra means goat in Arabic; if it is spelt according to original text. But it changed its spelling over India from 'K' KAF it changed to Quaf, and it was unfortunately interpreted as Cow. Europeans and soldiers consume quite an enormous number ; they are the main beef-eaters. But we don't have the power to stop it. All that we could do, is nothing beyond a memorial, a petition, or a deputation ; because we are domineered by an alien government. We have to face the argument that beef is cheaper than meat and hence the slaughter of the cow or at least an extensive use by the Muhomedan community. This was the argument advanced by the Late Moulana Muhomedah in his Presidential address at the Kokanada I. N. Congress. It is true that the state of things is such ; we cannot hoodwink it ; we shall have to solve the confusion along with Muhomedan brethren, as a nation.

Is it not a travesty of things, that in a cow-worshipping country like India, beef should sell cheaper than meat ? It is a sad tragedy indeed. We shall resume this question, later on. Let us meantime think out whose and what is the fault. Is it not paradoxical that a large animal costlier while alive, should be cheaper in meat ?

Again it is not incumbent on Muhomedans to offer an animal if they cannot afford it out of poverty. Why should they kill a Cow if they cannot procure a goat according to *Al Kuran's* injunction !

THE MUSLIM OUTLOOK

HAKIM AJMAL KHAN'S VIEWS.

The Late-Lamented Hakim Ajmal Khan, a Moulvi of no mean scholarship and erudition, in a pamphlet under the title of 'Hindu Muslim Unity' comprising the Presidential Address to the All India Muslim League, Amritsa' (1919), published by the Cow Protection Society, 48, Banstolla Street, Calcutta, states as under :-

'We are, and should be fully cognizant of the fact that cow-killing seriously annoys our fellowmen. But before holding out any assurance to them, we must first see in what light our religion views this question. We must also determine the extent to which the *Qurbani* is enjoined upon us irrespective of course, of the slaughter of the cows. According to Islam, *Qurbani* or Sacrificial offering is incumbent on Muslims. Now it is a matter of choice to fulfil this observance by sacrificing camels, sheep, goat or cow, which simply means that any of these animals can be fit for offerings. Crores of Indian Muslims must be strangers to the slaughter of the camels, for the fulfilment of this observance, but none of them can possibly be accused of the slightest religious omission.

On the contrary, Mussalmans of Arabia, Syria, Egypt, Tripoli, Asiatic Turkey have been faithful to this observance without ever having slaughtered a cow, and I am confident no erudite theologian or *Mufti* can maintain that these Mussalmans have failed to observe the *Sunnat* (practice of the Prophet) or have been guilty of any religious shortcoming. If any Mussalman dares to call religiously legitimate practice illegitimate, he certainly commits a sin. I consider it appropriate at this stage, to recount some of the *Ahadees* (religious practices) according to which the sacrifice

of animals other than the cow is entitled to preference. For instance, *Ummi Salmah* (the Holy Prophet's venerable wife) says that the Prophet once observed, 'if any of you see the crescent heralding the month of *Zil*

Hijjah and desires to sacrifice a goat 'etc. which obviously indicates that the Arabs were in the habit of sacrificing goats. According to another tradition, our Prophet said that of all sacrificial animals sheep was preferable: if we

reserve sheep alone for the offering, we will be complying with this tradition.' He then exhorts the Indian Muslims to take the initiative instead



ROMANCE OF THE COW

of being advised by their Hindu neighbours, and by thus using judicious discrimination in the selection of the sacrificial animal which will be in best accord with Islamic tradition, bring about an era of peaceful relation within India and enhance national reputation abroad.'

Late Mr. M. M. Pickthall informs in a valuable note that there is absolutely no Islamic order or tradition for the slaughter of the cows at '*Id-ud-Dhuha*' or at any other time. We had never heard of cows being regularly and habitually killed for food until we came to India. In other countries of Asia and in Europe, where beef is eaten oxen and not cows are always kept for slaughter.

CAUSES OF INDIAN DISRUPTION

HAKIM AJMAL KHAN'S VIEWS

"*Bakra-Id* is the religious festival in which Mussulmans perform pilgrimages around their holy places in Mecca. At this festival they have to sacrifice in pursuance of the sacrifice of *Abraham*, the Mussalmans of India being too far away from Mecca go to the city of Ajmer. But neither the text of the *Koran* nor tradition enjoined the slaughter of the cow. In Turkey, Egypt, Syria, and Persia where a cow might be slaughtered without offence to any one, a sheep is preferred."

Questioned about the reasons why the Indian-Muslims prefer the cow to any other animal in their sacrifice, the Hakim continues :

"Simply because the goat and the sheep are much more expensive in India than the cow, the Mussalman cannot afford the price of a sheep. But **THE KORAN SPECIFIES THAT THE SACRIFICE IS NOT NECESSARY FOR THE POOR.** Mussalmans are so poor that they cannot afford even a cow". The poor Muslims resort to the sacrifice of cows, because all people are not actuated by commonsense and good feeling". These two extracts practically conclude that neither *Koran* nor Arabic tradition has anything to say about the fundamental importance of cow-slaughter in Islam on sacrificial occasions.

CHAPTER V

HAIL, MOTHER INDIA!

THOSE KAMADHENU DAYS-RISE & FALL

Mother of Prosperity.

Bounties of Lactoproducts.

Cattlewealth of the Land.



HAIL, MOTHER INDIA!



Soil of Ancient India, Cradle of humanity

Hail, Hail.

Venerable and efficient Nurse,

Whom centuries of brutal invasions

Have not yet buried under the dust

By oblivion.

Hail father land of faith,

Of love, of poetry and science,

May we hail a revival of Thy past

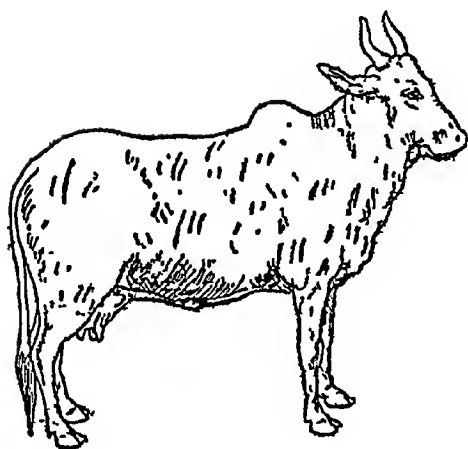
In western future.

LUIOUS LEAR.



THOSE KAMDHENU DAYS!

MOTHER OF PROSPERITY



India, the Glory of the Globe, was once, literally a Land of Milk and Honey. Sweet nectarlike founts of milk played perennial and profuse throughout the length and breadth of the country *Panchgavya* meaning milk, curds, urine, excreta and goroachan, was a blessing of the Providence. The nation then was all hail and hearty, pure and powerful

The cow was then actually the mother of Prosperity. The strength of the cow-herds was measured by *Gokul*, myriads and millions. Their capital was cow in main. (c. f. *caput*—the head of cattle and *pecunia* money from *pecus*—cattle). This signifies that cattle constituted the real wealth of India.

Real accounts of cow-keeping read like a romance of the past, nevertheless these legends are all true and not a bit exaggerated. They are historical facts which can be borne out even now.

Bos Indicus or *Zebu*—the Indian cow famous as Brahman cattle and *Bos Bapalus* the Indian buffaloes have figured gloriously in the history of the Taurine World from times immemorial. (refer to the Special Cattle Number of the National Geographical Magazine)

BOUNTIES OF LACTOPRODUCTS.

But why talk of those prehistoric times? Even in the medieval times that is upto the reign of Akbar we read of milk selling at over 6 mds per rupee and ghee at 20 to 25 lbs., for a Re, and the whole family being feasted within 2 As! (*Ain-e-Akbari* and *Samrat Akbar*)

ROMANCE OF THE COW

Only a generation back, milk was selling at more than a maund and ghee 6 to 8 lbs. a Re. There being vast expanses of pasture land cattle could evidently thrive well.

With massive full-grown statures they looked grand and majestic like statues chiselled out of marble, and the solemn pathos and silent beauty imprinted on their face inspired deep reverence in our bosom.

Their confirmations were arrestive both from points of view of fancy and utility. Steers of cow bred and brought up with a tender care and an overflowing love as the dearborn of mother cow were all sportive and buoyant. They bounced and bellowed in great glee. Fed on rich rations, they grew plump and sleek in body. And within a couple of years or thereabout turned into big bulls not loath to shirk the yoke, but fain to bear it cheerfully.

Their number being quite commensurate with the arable land, the acreage per pair was not so awful as now. They were on the contrary so many that even 8, 10 or 12, pairs of oxen worked at a plough in tandem in Vedic Times (*Satavlekar's Ved Men Krishna Vidya*)

Because of the loving care of their owners they built strong constitutions in their adolescence. Agricultural cattle abounded in plenty, they were less laboured; they were pure bred hence stout for draft purpose. They were free from disease as they were well cared and well nourished. Agriculture was so efficient, and so successful. The butchers' and the beef-eaters' knives did not flourish so much as now, hence they could thrive well and in good number.

CATTLE WEALTH OF THE LAND

In remote Vedic and Puranic Ages we read of the accounts of *Gotamas* and *Gokulas*. *Gokula* means a herd of a myriad kine. There were big merchants and *varshyas*. Let us call them Cow-Princes or *Gotamas*. Many of them owned immense herds in strength of lakhs and millions.

According to Hindu Mythology, the status of the cow was raised above the kingdom of the king. A fisherman should have once upon a time slighted the *Rishi Chyavan* who in his turn cursed the former. To get absolved from the curse, king *Nahoosha* was prepared to part with anything, near and dear to him, even his own kingdom. Yet the curse could not be broken, it broke only when he gifted a single cow. This Puranic allusion sheds a flood of light on the status of the cow without needing any comments and criticism.

HAIL, MOTHER INDIA!

Dhoomya's brother *Upamanyu* had undergone strict penance of the *Lord Shiva* in order to obtain milk of the cow

Nandaraja a cowherd king and the foster father of *Lord Krishna* who in his turn turned out the mightiest and pre-eminent Cow-Prince of the World, had a herd of cows only 9 lae strong!

The Brahmi kings in Burma who were under the pious influence of Buddhism did not hang the assassins and murderers but passed lesser sentences and gave Rs. 300 as condolence to their families. They only hanged the cow killers. That the cow life was held superior and more sacred could be well seen from the Burmese mode of justice.

In times of *Lord Siddhantha*, such a big magnate as *Dhanjaya* had given his daughter in dowry 500 waggons of gold sovereigns, 500 cartfuls of gold vessels, silver ones, copper ones, khaddar, molasses, rice, implements of Agriculture, 500 cart loads of each. Besides all these, he donated a herd of the length of 6 miles and breadth of 140 cubits.

Among the pet disciples of *Shree Mahaveer*, *Mahashalaka* of *Rajgrhi* had 80,000 kine, *Chulnapita* of *Benares* 8 myriads. *Kamdev* of *Champa*, *Surdev* of *Benares*, *Kundkokil* of *Kampilya*, *Chulshatak* of *Alambhaya*, each possessed 60,000 heads. *Anand* of *Vanyagram*, *Nandinipita* of *Shravsti*, *Shalimpita* had 40,000 and *Shakdalputra* 10,000 kine. *Revati* the better half of *Mahashatak* was dowered 80,000 kine. *Ananda* had restricted his property to 40,000 kine. (*Upasak Dasanga Sutra*)

Even the law books prescribe to bequeath at least 10 kine to each son. (*Manu*, *Shukra*, *Vashishtha*)

Compare the statistics of Rome from the following instance. A freed man under the reign of Augustus, though his fortune had suffered great losses in the civil wars, left behind him 8,600 yokes of oxen, 2,50,000 heads of smaller cattle, goats and sheep and what was almost included in the description of cattle, 4,116 slaves.

India produced great quantity of dairy products in the 15th century and it is said that the people and even the palace elephants of which there were hundreds, had a diet largely of rice and butter or 'milk and vegetables' or ' . . . rice, milk, cheese etc '

These numbers sound fabulous to our ears at the present time of cattle paucity. But we need not doubt its veracity, as at present in America—the Land of Superlatives, Kisholom, Colonel Slotter, Martin, Childers, Burke, Burnet, Ek, Prior, Renolds Bros, Continental Mill Iron Co, Metador, John Adir, (J. A). Santa Jartendis, and (ranch of Captain King) Capital Syndicate of Pohendal and fifty others each owned 20,000 kine (Pioneers of 1889)

A master of even a hundred thousand cows is reported in the story of Americanization

ROMANCE OF THE COW

Now let us devote a few lines to the conditions that were responsible for the better days of cattle

Till the advent of the Western powers and the subsequent establishment of British Raj in India, India was almost rural. Big cities although flourished, yet the Urban and the Rural India were connected in traffic by animal Traction.

For the transportation and conveyance of artillery, agricultural productions, all sorts of commodities, other traffic, and also for ride and travel purposes, animals were chiefly used. Mechanical power was altogether unknown. Bullocks, horses, camels, donkeys and elephants were the principle beasts of burden.

Besides manual labour, the main source of power was animal and animal alone. They were the backbones of India's economic and commercial and even political structure.

Manucci in *Historia to Mogar* records that during Aurangzeban wars a hundred thousand souls have yearly died; and of animals, pack oxen, camels and elephants over 3,00,000 in number died every year.

All communications, traffic and conveyance depended on cattle, till the dawn of New Era. With the British Government came in machinery and motive forces. Steam, oil or electric power was not in vogue. People developed animal power singularly for the personal and national comforts and conveniences.

Pressure on land was not so acute then. Revenue system and political jugglery were not visible. Life was so simple and self-supporting; competition and capitalism of the present age of Industrialism had not embittered life as now. Religious fervor also had not so much relaxed on account of modern education and civilization. Consequently Pastures for the cattle remained reserved. Feeds and fodders sold cheap and Cattle proved indispensably useful. Mechanical power, moreover, had not to throw them into insignificance and unemployment, as at present.

All the above factors conspired into creating quite a genial atmosphere for animal life; hence cattle could assert their own, quite undisputedly; and thrive so well. They did not suffer in health and stamina for want of adequate ration. They were therefore all plump and sleek in body, quite lively and loveable. In quantity and quality they were par excellent. Pastoral and agricultural products grew luxuriant and had a direct effect upon the cattle world also.

Money-crops-craze had not ruffled the agriculturist as to-day. Human pressure on land was not as acute as to-day. Revenue payments and taxes and cess were not so hard and heavy to pay. Hence cattle pressure on land was not so telling and competitive in effect.

Owing to all the natural facilities of breeding, feeding and grazing, cattle flourished like anything. Forest restrictions, buffalo, tanner, butcher, exporter, famines, epizootics, scrub cows and numerous other factors detrimental to the growth of the cow in particular and cattle in general, were almost absent (*vide Plate*). Then there were no circumstances for the cattle to dwindle. They remained increasingly progressive in performance and service.

They were no 'boarders' and economic drag to their keepers, as to-day.

UNPRODUCTIVE'S CRORES
 BOARDS
 SCRUB THE HERDS
 TIDE STRAY
 UNPRODUCTIVE WASTE OF RS IN CRORES
 PINCH POLE
 RS IN CRORES OF HIDES AND SKINS
 TANNER
 PESTS & FAMINES & EPIZOOTICS & STARVATION
 DECAYING COW
 WORK TERRIBLE HAVOC
 FARMER THE COW
 ONE COW EVERY MINUTE
 KILLER
 STARVATION
 PRIME
 FOREST
 BOUNTY NO. 14 RITY SHALL SAVE THE STARVATION
 MONEY CROPS
 FODDER STARVATION
 DUTCHER FREIGHT POLICY
 RAILWAY
 ECLIPSING & DETERIORATING THE COW
 BUFFALO FOR THE COW
 RANGED IN SILO
 (2) TROUGH LABOUR
 (3) PEDIGREE BULL
 (4) JEEZADA "HOT ON
 TRADITIONAL BUT NATIONAL
 3 NATIONAL LINES GANDHI
 TYPE JELADATOREPLINE
 MAHAJAN TYPE
 (5) DAIRY & TANNERY
 'NATIONAL SCIENCE'
 'NATIONAL SCIENCE'
 'NATIONAL SCIENCE'
 'NATIONAL SCIENCE'



CHAPTER VI

THESE SCRUB DAYS

The Paradise lost.

Pressure on Land & Poverty.

The Moot cause.

Bounties and not Charities.

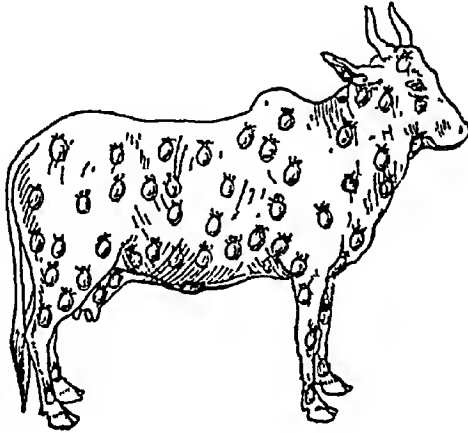
Cattle position of India.

What Kills & Chills India.

Law of Limitation.



THESE SCRUB DAYS



What country in the world has ever flourished which has neglected its cattle? We boast ourselves as the 'Trustees of India,' but what have we done to preserve the Cattle strength of India? Absolutely nothing

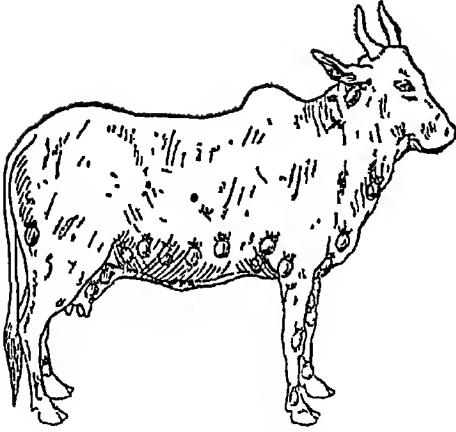
I am ashamed to confess that we have rather helped
EXTINCTION OF INDIA'S CATTLE.

I CAN DREAM OF
A CATTLE WITHOUT A NATION
BUT I CANNOT IMAGINE OF
A NATION WITHOUT A CATTLE.

Sir Wm Wederburn.



THE PARADISE LOST



But alas, there is but a wide gulf between then and now. Then it was heaven, now it is hell for them. Old order changed giving place to new. The old was gold for cattle on the whole. The set of conditions have changed and these are critical times for them.

They are hedged over with many difficulties on all sides and they have to dwindle. To-day a dry cow cannot bear her cost in big cities and have to be disposed

of damn cheap. Even the best milch cows selling at Rs 100 or 150 have to meet the same fate. They are either let loose to loiter in streets and roads to be impounded by the police, or to meet even the worse fate under municipal legislation, or are summarily sold away to butchers or their agents at a nominal price of Rs. ten or so. This is the state of even the best animals. In the upcountry and rural sides cows as such, are found to be uneconomical and losing, therefore they are replaced by buffaloes. The people do not keep cows because they can neither withstand the economic tension by way of paying high costs of feeds and fodder even in villages devoid of Pasture, nor can they suffer the mother cow to be subjected to the present plight on their account. Pujrapoles, cattle fairs, slaughter houses and the reduced herds of reduced cows offer sad commentary on their present plight.

One melancholy fact that emerges from the present economic jumble, threatens us that the heyday for the cows has gone and a nightmare has fallen on them in spite of our cow worship and '*Jeevdaya*'. The economic has flung a challenge to the religious. It must be frankly and candidly admitted that in spite of any amount of '*Jeevdaya*' one cannot solve the problem satisfactorily beyond saving a few souls. To withstand the present economic tension is a Herculean task and it racks the brain of mightiest Prince of '*Jeevdaya*'. the most humanitarian of humanitarians—Mahatma Gandhi who has observed in one place that he will be reborn if needed for the cause of the suppressed class and the mother cow. Under the present economic embarrassment, a dry cow is as good (or as bad) as a dead one, both fetching the same price. That a cow on drying is valued in the neighbourhood of Rs 10 betrays the sad fact that she is depreciated five to ten times of her intrinsic value.

PRESSURE ON LAND AND POVERTY

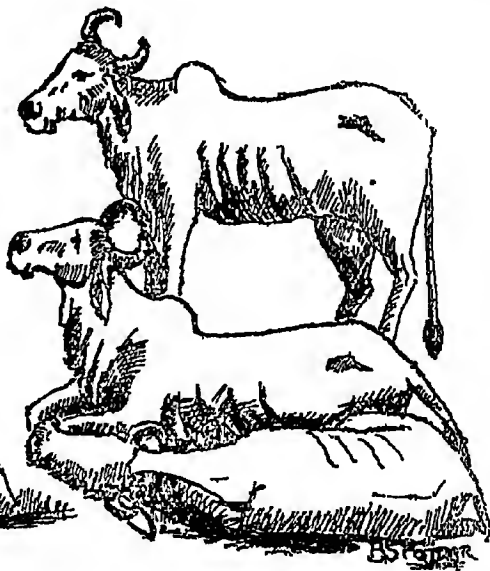
The cost of maintenance becomes so unbearable to the poor wretched *gavli* as he has no other go but to part with his pet. Best cows and other animals are drained to the urban areas to meet the above fate in the same year of their immigration to the city, immediately on drying. The hide and skin merchant, i.e. the tanner can easily knock out more than the price of the drying and dying cow.

Hence the cycle of draining, drying, and dying of choice cattle works on, year in, year out. The Inquisition Wheel of animal slaughter goes on incessantly, not for want of mercy but for want of money.

THE MOOT CAUSE

Poverty in its ghastliest form is devouring the very vitals of the nation. Owing to the low purchasing power and economic loot all round, even the human beings suffer and find it beyond their power to eke out bare existence, much more should it then be for the dumb-driven cattle to keep their bone and skin together.

Cattle are generically responsive to the better conditions of life. All animals are more efficient than even efficient engines, in the utilization of energy in Production and Performance. (Re Henry and Morrison's Feeds and Feeding) However one must not lose sight of the fact that in Nutritional Economy, the prior rights are of the maintenance over those of performance. 60% of Thermic Energy is needed for the former and only a part of the rest (about 29%) is utilized for the latter. (*Ibid*).



For the lack of roughage *et hb*, to keep the furnace of life heated, cattle may not be expected to produce more than what they do at present. Nothing can

THESE SCRUB DAYS

be produced out of nothing There must be something out of which perhaps something better, richer and finer can be manufactured or created by a mechanism or an organism. These starvelings of cattle do not get maintenance *quantum sufficientum* Yet they have to produce and they do produce something Whence and how does it come then ? The science of Animal nutrition and Biology answers that it comes from the animal's own bone and blood The storage and the very parts of the animal body are consumed and turn into productions such as milk etc, fit for human consumption This means withdrawing and overdrawing the savings and reserves from the banks of animal bodies And that is why cattle to-day are so stunted and stifled. To starve cattle and draw out to the last what one can, is the general procedure. How uneconomical, irrational, inhuman, and inhumane, yet how true !

Economic tension has permeated the realm of cattle, to the extent that they have to starve and suffer Their misery is twofold - they have to starve and produce simultaneously This tells on their life. Cattle have turned into despicable wretches usually styled as Mongrels or Scrubs To keep up these scrubs becomes increasingly uneconomical, on one hand, and yet to expect and extract scanty products from them on the other hand, is at once ludicrous and painful.

To own such submarginal creatures is idle and useless, and to protect them in the same condition is perpetuating and intensifying the miseries of others. The self-helping ones suffer for want of bounties, while the undeserving enjoy charities I say it is a sheer impolicy if not cruelty It is a sad tragedy indeed.

BOUNTIES & NOT CHARITIES IS THE ORDER OF THE DAY

Charities we had enough It was largely aimless, uneconomical and even anti-economical sometimes Hence cattle have suffered both ways, like an 'Angle of Double Refraction' Unfits have not improved their lot through charity of our Pinjrapoles and the fit ones have become misfits for want of bounties and economic readjustment in their keepers' homes It is a sheer eyewash and a makebelieve to ease our conscience that we continue the Pinjrapole method unreformed, in light of above facts

CATTLE POSITION OF INDIA

DIAGNOSIS OF CATTLE DEGENERATION

Country	Number of cows (and buffaloes)	Percentage to total cattle	Total cattle (bo- vines to nearest hundred thousand)	Population to nearest hundred thousand	No of cattle per 100 Popu- lation	Popu- lation per square mile	Cattle factor	Cattle Index No
1	2	3	4	5	6	7	8	9
			(Thou- sand)	(Thou- sand)				
1 Great Britain and Ireland	4,606,902	37	12,500	47,300	26	400	7	17
2 Denmark	1 810,898	52	2,500	3,400	82	206	41	100
3 France	7,169,670	53	13,500	39,400	34	184	19	46
4 Germany	8,206,170	50	16,400	62,500	26	345	8	19
5 Russia	18,200,000	55	33,100	132,000	25	19	131	319
6 Canada	3,745,804	38	9,800	9,400	104	3	3,466	845
7 United States	24,082,000	37	65,000	105,700	61	31	19	46
8 Argentina	3,294,000	9	36,600	9,500	385	7	5,500	340
9 Union of South Africa	2,203,778	37	6,100	6,900	88	12	733	178
10 Australia	2,419,809	17	14,200	5,900	240	2	12,000	2,926
11 New Zealand	1,116,828	37	3,000	1,200	250	12	2,083	5,08
12 Japan	53,750	3 8	1,400	61,000	23	233	10	24
13 British India	372,000,000	24	146,500	247,000	59	240	24	58
14 Central Provin- ces and Berar	4,000,000	30	11,500	13,900	88	139	59	143

(Journal of Animal Husbandry and Dairying in India—80)

WHAT KILLS & CHILLS INDIA? ITS POVERTY.

Indian soil, Indian vegetation, Indian animals, Indian humanity are all common victims to National Poverty. Poverty impoverishes, in geometrical progression and in its wake, step in starvation, inefficiency and what not? Like the cruel Spanish Inquisition Wheel the vicious cycle of Poverty revolves shattering, battering, clattering, and spattering whatever it dashes against; and the net result whereof is the current crises in cattle life.

It is a state of *Impasse*: quality has gone down on one hand, and on the other, quantity in order to make amends for the run down quality, cannot be afforded to multiply any further. Looking to the keeping capacity of the country, the number is shockingly large. (Re. Gospel and the Plough — by Sam Higginbottom, and the Table of Cattle Index)* The performing power of cattle is hopelessly too small. Low keeping capacity encourages and enhances slaughter for the killing communities, and their low performing power render it costly, difficult and even impracticable to save them for the saving communities.

Their quality condemns them to live as useful animals, while their quantity compels them to suffer and eventually to succumb.

Which and how long can a humanitarian individual or society save them against the currents of economy? To avert the dilemma is a very difficult task. It is a sheer absurdity and a frenzy to attempt the impossible.

THE LAW OF LIMITATION MUST BE RESPECTED.

The law of limitation forbids to attempt the impossible. It restricts all humanitarian efforts to save all life at all time. If attempts are made within limits of probability and practicality, then the results are quite gratifying.

To be sincere, there is an immense gulf between life and death, and one section or a group of people cannot bridge it, however earnest, honest and efficient it may be, in its efforts at that. It can fill only a hiatus in the wide and deep chasm.

* Journal of Animal Husbandry & Dairying in India - 1920

ROMANCE OF THE COW

Mahatma Gandhi observes in his writing that it is sheer arrogance to believe to save one and all with limited power as we human beings are endowed with. Out of infatuation we are likely to make the dumb creatures dependent and more helpless by overmercy That is but cruel kindness that reacts upon the saver and the saved Let us beware and bemoan the lot of these starvelings, meanwhile. In the subsequent chapters we shall reopen the topic as to what next The upshot of this all is that the quality requires to be supplemented Quantity says they are too many All the attendant forces and currents of life have only one unequivocal verdict —



IMPROVE QUALITY, REMOVE POVERTY & BE SAVED.



CHAPTER VII

NEMESIS OF KILLING

Genesis of Kurhani (Bhog).

Thou shalt not Kill.

Dietetic Survey of India.

Economic Wastage in Killing.

Should these be Killed ?

Slaughter Statistics of India.



NEMESIS OF KILLING

You cannot save many

You cannot save all.

Only Kill you never

Content with a few.

Improve those saved.

And you'll save many

Torturing and ill-treating and neglecting their
dumb charge, the Hindus are committing no
small sin and an insignificant error
Unmindful of quantity and intent
on quality alone we can rebuild our cattle wealth.



GENESIS OF KURBANI (BHOG)



When man was in the primitive stage and was groaning in ignorance, he feared the elements and out of frightful reverence to these supernatural agencies, he began to worship them, and offer his best such as food etc. In the primitive stage there was no light of science or reason, and he was steeped in such a crass ignorance, that he had to do it. His dietary in that nomadic and pastoral stage consisted of game and flesh along with wild roots etc. The taste of meat he could not give up absolutely, it lingered in him and hence these nasty sacrifices also. While the upper strata of Hindu society in light of reform brought about by *Buddha* and *Mahaveer*, shunned the bloody sacrifices and took to bloodless ones by using grains or herbs and ghee etc. If on religious and moral grounds, once killing becomes a taboo, then killing can stop in no time. It is not only tolerated by religion, but the pity is it obtains sanction and backing from religion. If the sense of compunction awakes in the human breast, no amount of preaching and demonstration will be needed in the land. Then the people who chooses to kill to-day, would prefer to die of starvation if needed, rather than killing. A European officer in Bengal has expressed his wonder on seeing famine-stricken people giving life rather than taking life. Do we not meet with the accounts of a famished mother selling away her suckling for a few coppers, in news columns? But the beauty is that she does not dream of killing life for filling her cursed little belly. This corroborates the above theory. As religion is the root of all virtues, so also a pseudoreligion is the root of all sins and miseries. Sham of religion gives a false cover of prestige and it deceives heavily. It deceives him that has it and him that respects it. Again the very psychology of us Indians, is that we shall refer every small detail of our life to religion. Everything there, is viewed in the perspective of Religion; never mind if that religion is a lie or a big bogus.

THOU SHALT NOT KILL

KILLING IS CRUEL,
KILLING IS PAINFUL

Killing is anti-national to India, as it is now only an agricultural country, and not a pastoral one.

Only pastoral countries or industrial ones can afford to kill for food. It is an impolicy to kill. But the lowered quality of cattle, impoverished people and run out land cannot afford to sustain millions of scrubs known as boarders and non-producing parasites.

It is uneconomical to allow such a tremendous and continuous slaughter at a rate of five cursed souls of cattle per minute.

Flesh foods are uncanny, ugly, unhygienic and uneconomical.

Flesh foods betray uncultural, inaesthetic, inhuman, anti-social and anti-national tendencies and propensities. It is a sad perversion of taste.

KILL YOU NEVER, SAVE ONLY FEW.

BUT IMPROVE THOSE SAVED AND YOU WILL SAVE MANY.

Swami Dayananda Saraswati the mightiest prince among modern religious reformers in India, in his brochure *Gokarunamdh* has computed that, A COW AND ITS FIRST GENERATION AFFORD HUMAN FOOD IN THE SHAPE OF AGRO-LACTO—PRODUCTS SUFFICIENT TO FEED 4,10,440 MOUTHS FOR A DAY. Now imagine the wonderful rate of geometric progression at which the next generation and its next and so on and so forth can supply their agro-lacto-products to the uncalculating humanity. Now compare this with the beef of the first generation which may hardly feed 80 mouths once and for all! There are no recurring bounties.

Similarly a goat and its first generation supply lactoproducts sufficient for 25,920 persons' single meals, while by killing one may hardly find food for a single score. Add to this, the manure, hair and other products that are perennially available while alive.

NEMESIS OF KILLING

KILLING IS SILLY.

From the study of the comparative figures of products of a live animal and a dead one, a fact emanates in bold relief that it is an uneconomical indulgence to kill an animal whenever one can avoid.

FLESH IS NOT A NATURAL FOOD.

On hygienic and dietetic grounds as also humanitarian and economical, flesh is not so natural, so invigorating, so aesthetic a food as the lactoproducts

'A cow yielding 8,000 lbs milk' yields therein 296 lbs protein in 296 lbs fat, 392 lbs sugar, and 56 lbs minerals. This is 56% more protein, 30% more sugar and fat and 19% more mineral matter than is contained in the entire body of a fat 2 years old steer weighing 1,200 lbs

(Henry and Morrison)

ECONOMIC WASTAGE IN KILLING.

To kill a Cow is as bad as to kill many men.

In 14-15 years' life time she gives 6 plus 6 (12) calves; serves 15,440 men one day, and 2,56,000 men with Labour

—New Ideal In India During 19th Century, Revd John Morrison

A 1200 lbs steer ready for market contains only about 360 lbs of actual food. A dairy cow at two years of age begins to produce and yield (of course in the West at that age) daily thereafter 900 lbs of edible nutrients in the year and will continue to produce the same amount 7 years thereafter, i.e. she produces during her actual life 6,300 lbs of Human Food.

In other words it takes 17 steers to produce the same amount of Human Food as a Dairy Cow produces during her life time.

A two-year-old steer, ready for market, contains only about 280 lbs of total fat while a fair dairy cow will produce in her 6,000 lbs of milk, 300 lbs of fat yearly for 7 years, or a total of 2,100 lbs of fat during her life time, as against a steer's 280 lbs of fat in his life

Again that the ulterior and indirect gain derived from her progeny is vouchsafed, is an additional point in favour of saving

ROMANCE OF THE COW

A BEEF-EATER WASTES 82 lbs. TO GAIN ONLY ONE.

* * * *

100 lbs of grain fed to a steer are returned with 8 lbs of beef. [(Again lb for lb corn represents greater food value than beef) and that too a second-hand food. (Armsby).

100 acres of land devoted to sheep raising will support about 42 persons, but the same area planted to potatoes would support more than 683 persons, or sixteen times as many.

Per acre one could raise 14 lbs of mutton proteins, 18 lbs beef proteins, 22 lbs pork proteins, 27 lbs poultry and egg proteins while he could raise 72 lbs of milk proteins. (Cooper and Spillman)

Only 3.5% of the total digested food is recovered in form of beef while of milk 18% solid material is obtained. (Armsby)

An acre of land yields 200 lbs beef, 250 lbs mutton and 400 lbs milk (720 lbs milk solids) or say it yields 7.11 and 4.3 per cent of wheat yield respectively.

COMPARE THE YIELDS IN A WEEK.

	Protein	Fat	Sugar	Mineral	Total Dry Matter	
Cow 30 lbs						Killing in
milk per week	7.35	7.37	6.67	1.57	26.25	} India is a costly crime
Ox 15 lbs per week	1.13	9.53	..	0.22	10.88	

SHOULD THESE BE KILLED !

How strange and absurd does it sound that the possibilities and potentialities of the animals are so incredibly marvellous and the Nature's plan is seen therethrough that they are more beneficial and useful to mankind, while alive rather than while dead. Study both these pictures and at a glance you could see that the live products only the **SECRECTIONS** if not the excretions are more nourishing, cheaper and available in greater amount than the relics of the dead ones

It is very cruel to kill Not only that but it is costlier and less beneficial and nourishing to eat the dead relics of animals. Herbivora are cheaper in their production of live products manifold rather than their meat.

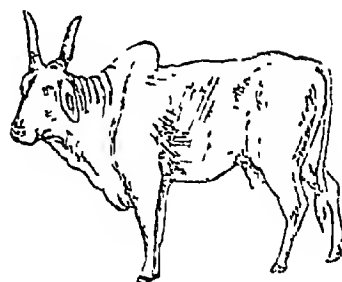
To kill is thus Uneconomical, Unhumane, Inhuman, and Anti-national. If the non-vegetarian brethren in India took lacto-vegetable products as necessary substitutes of flesh foods, it will be reckoned a sort of national service, and an act of moderation and hence of mercy.

To kill the agricultural stock is doubly cruel and short-sighted. It is anti-national, uneconomical and suicidal by all means.

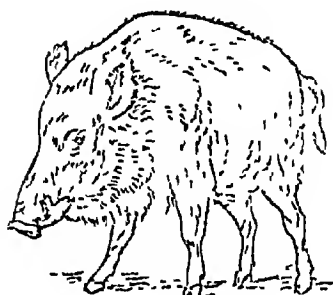
COW THE QUEEN, IN THE ANIMAL KINGDOM

(Food yields per 100 lbs nutrition)

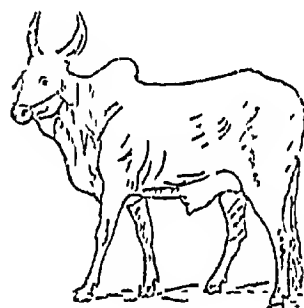
	Edibles (in lbs.)	Solid edibles (in lbs.)
COW		
Milk	139.0	18.0
Cheese	14.8	9.4
Butter	6.4	5.4



PIG		
Pork	25.0	15.6



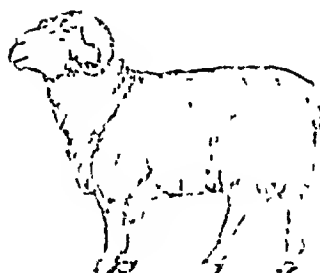
STEER		
Beef	36.5	8.1
Veal	8.3	2.8



POULTRY		
Eggs	19.6	5.1
Fowl	15.6	4.2



SHEEP		
Mutton	9.6	3.2
	7.0	2.6



Mark the supremacy of the
cow for her lacto-products Notice
the Nature's Plan!

TO KILL USEFUL CREATURES IS THE HEIGHT OF FOLLY.

Sanity on the part of Hindus and Muhomedans will save cattle, cement them heart to heart and secure national solidarity for Swaraj.

The following statistics of the Slaughter of Birds in West may throw some sidelight.

One dealer in London is said to have received as a single consignment 32,000 dead humming birds, 8,000 aquatics and 8,00,000 pairs of wings.

A Parisian dealer had a contract for 4,00,000 birds ; an army of murderers were turned out to supply the order.

No less than 4,000 terus have been sent from Long Island in one season, for millinery purposes.

At one auction alone in London there were sold 4,04,389 West Indian and Brazilian bird-kings and 3,56,389 East Indians, besides thousands of pheasants and birds of Paradise—"Animal's Right"—SALT.

The West slaughters bullocks but not kine ; only when they are too old and too uneconomical they kill the latter. But till they are alive they shall be found in the best state of health and comfort. They control the number so that the whole herds may not run down into scrubs. Holland had recently to kill 10,000 milch cows in order to keep up its standard of cattle efficiency. Nevertheless India has to learn from the West the art and science of keeping cattle so beautifully, so tastefully and so fastidiously.

SLAUGHTER STATISTICS OF INDIA

1923-24	Cows	Bu- faloes	Bul- locks	Calves	Total	Sheep and Goats
1 Calcutta .	83,621	4,358		2,225	90,314	2,62,074
2 Bandra .	33,723	13,396	13,035		58,154	7,86,342
3 Shahjahanpur	25,653					1,90,789
4 Delhi	29,565					10,291
5 Howrah	13,154	189				1,98,499
6 Lahore	6,322	4,566	549		11,437	26,492
7 Sialkot	6,258					68,164
8 Sholapur	5,190	3,510	2,655	260	11,615	14,427
9 Meerut	5,062	2,438	1,247	706	9,453	43,890
10 Cawnpur .	5,914	1,171	3,444	34	10,563	1,18,530
11 Lucknow	2,485	7,215	1,457		11,157	223
12 Ahmedabad	1,866	4,208	7,912	142	14,128	3,558
13 Rangoon	6,515	1,363	17,581	812	26,509	15,978
14 Karachi .	2,382	173	2,216	608	5,379	13,462
15 Akola	4,021					8,889
16 Bahruach	2,424	1,681	796		4,901	43,363
17 Agra .	2,260	2,851	2,451	3,029	10,591	86,924
18 Gorakpur	2,180	1,966	176		4,322	7,142
19 Bhusaval .	1,978					11,979
20 Godra	5,101					
21 Jabbulpore	1,940					
22 Rewai .	1,230	3,331	351	163	5,075	4,677
23 Muttra city	1,224	1,227	2,492	508	5,451	8,204
24 Gazipur	1,975	129	462		2,566	4,961
25 Dacca ...	2,612		806	5,642	9,060	28,842
26 Rajahmundry .	833	1,778	298	10	2,919	20,450
27 Vizagapatam	1,080	920	37	3	2,040	18,793
28 Kurla		7,705				
29 Broach	350	1,721	461		2,532	15,045
30 Trichinopally	2,994	61	1,243		4,298	92,977
31 Surat ..	409	1,523	1,511	33	3,476	92,450
32 Coonoor	2,386					4,890
33 Akyab ...	1,965	32		1,166	3,163	497
34 Burhanpur ..	1,575	289	614		2,478	9,509
35 Deragazhikhan ...	100	99	1,243	1,430	2,874	5,037
36 Mahegaon .	1,673	1,176		33	2,882	
37 Nadiad ..	2	1,793	9		1,804	2,654
38 Mangalore ...	1,124				724	4,521
39 Mysore .	682	570	2,086		3,338	53,241
40 Malkapur .	476	815	1,450		2,741	1,894
41 Monghyr	267	888	44		1,199	16,390
42 Dohad	1,019	263	862		2,144	5,109
43 Dhruha .	924	180	646		1,750	11,645
44 Belgaum	414	777	463		1,654	5,963
45 Shikarpur	418	488	289		1,195	34,460

FORGET NOT THAT EVERY MINUTE IN INDIA, FIVE COWS ARE
SLAUGHTERED, AND ONE FINE COW IS EXPORTED

CHAPTER VIII

GANDHIJI'S VIEWS

Swaraj through Cow.

Gandhiji's Cow cult

Gandhiji on Cattle Wealth.

The Plight.

The Right Way

Our Pinjrapols.

Kind Cruelty.

Dairies and Tanneries.

Our Cattle Wealth.

Village Tanning & Its Possibility,



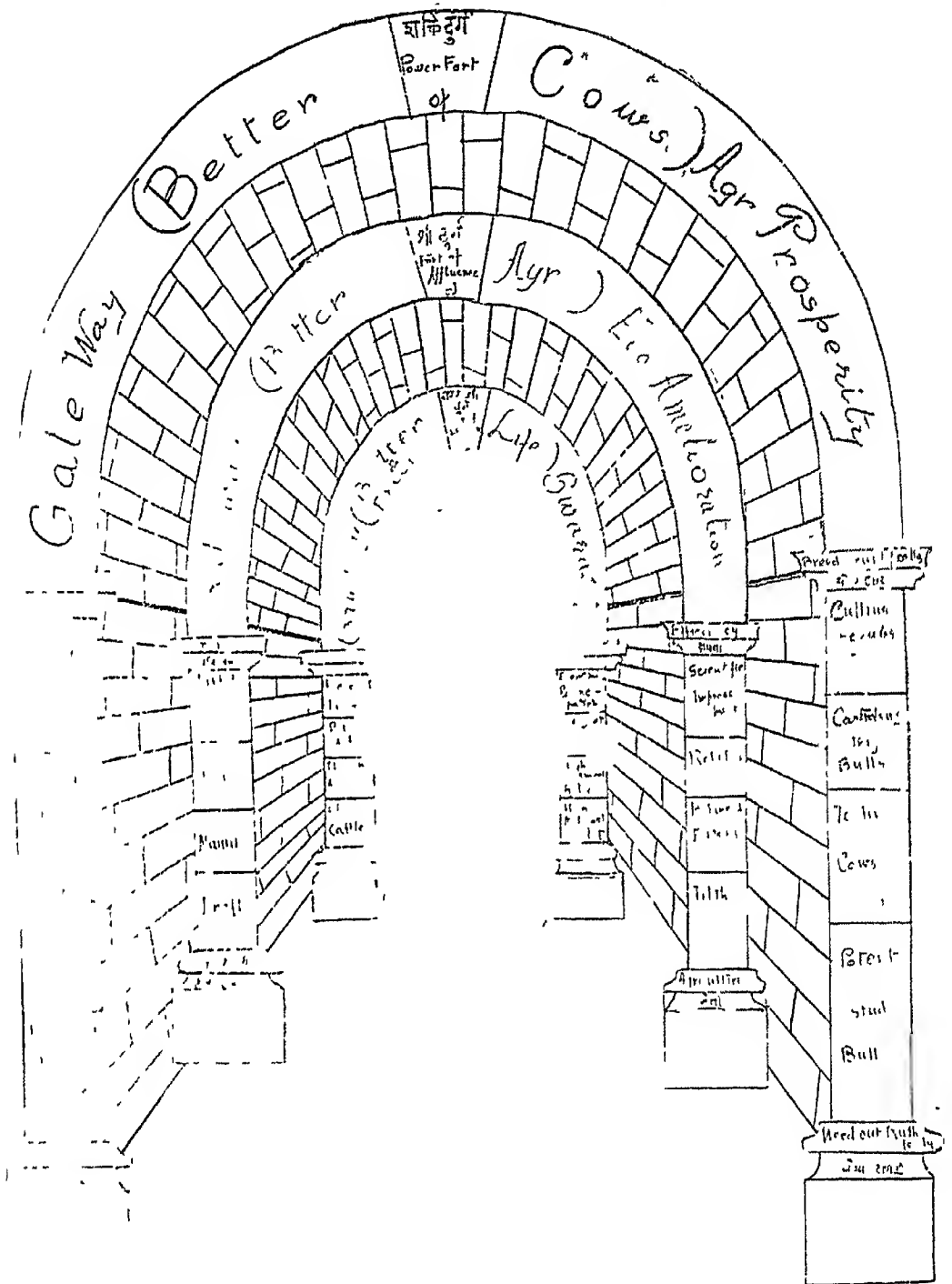
GANDHIJ'S VIEWS



"Among its many contributions, the idea of man's identity with the dumb creation is a unique one. To me cow worship is a great idea which is capable of expansion. Its freedom from the modern proselytisation is also to me a precious thing. It needs no preaching. It says 'Live the Life'. It is my business. It is your business to live the life, and then we leave its influence on ages."

M. K. Gandhi.

TRIPLE GATE OF SWARAJ



Gandhi, the Goddess of Liberty should be approached by scaling the fortresses of Power, Affluence & Learning in order to secure Poorna Swaraj

GANDHIJI'S VIEWS

SWARAJ THROUGH COW.

I hold the question of cow protection to be no less momentous but in certain respects even of far greater moment than that of Swaraj. The term Swaraj would be devoid of all meaning so long as we have not found out a way of saving the cow, for that is the touchstone on which Hinduism must be tested and proved before there can be any real Swaraj in India. To-day I want to bring home to you if I can the close relation which exists between the present poverty-stricken condition of India and our failure to protect the cow. I offered to share with the Mussalmans their suffering to the best of my capacity not merely because I wanted their co-operation for winning Swaraj but also because I had in mind the object of saving the cow.

Gandhiji's Presidential Speech at the Cow Conference at
Belgaum—Young India 29th January, 1925.

GANDHIJI'S COW CULT.

Go to any Hindu child and he would tell you that cow protection is the supreme duty of every Hindu and that anyone who does not believe in it hardly deserves the name of the Hindu. But while I am a firm believer in the necessity and importance of cow protection, I do not at all endorse the current methods adopted for the purpose. Some of the practices followed in the name of cow protection cause me extreme anguish. My heart aches in me. Since I wrote in 'Hind Swaraj' that our Cow Protection Societies were in fact so many Cow Killing Societies, my conviction has grown stronger and firmer every day.

If anybody was really anxious to save the cow, he ought once for all to disabuse his mind of the notion that he has to make the Christians and Mussalmans to desist from cow-killing. Unfortunately to-day we believe that the problem of the cow protection consists merely in preventing Non-Hindus especially Mussalmans from beef-eating and cow-killing. That seems to me to be absurd. Let no one, however, conclude from this that I am indifferent when a Non-Hindu kills a cow or that I can bear the practice of cow-killing. On the contrary no one experiences a greater agony of the soul when a cow is killed. But what am I to do? Am I to fulfil my Dharma myself or am I to get it fulfilled by proxy? To make a Mussalman, therefore to abstain from cow-killing under compulsion, would amount in my opinion to converting him to Hinduism by force. Even in India under Swarajya in my opinion, it would be for a Hindu majority unwise and improper to coerce by legislation a Mussalman minority into submission to statutory prohibition of cow-slaughter.

My religion teaches me that I should by my personal conduct instil into the minds of those who might hold different views, the conviction that cow-killing is a sin and that therefore it ought to be abandoned. My ambition is no less

ROMANCE OF THE COW

than to see the principle of cow protection established throughout the world. But that requires that I should set my own house thoroughly in order first.

If therefore I am asked how to save the cow, my first advice will be, 'Dismiss from your minds the Mussalmans and Christians altogether and mind your own duty first.' I am prepared to place my life in the hands of the Mussalman to live merely on their sufferance. Why? Simply that I might be able to protect the cow. I hope to achieve the end not by entering into a bargain with Mussalmans, but by bringing about a change of heart in them. So long as this is not done, I hold my soul in patience. For I have not a shadow of doubt in my mind that such a change of heart can be brought about only by our own correct conduct towards them and by our personal example.

I want to convert the Englishmen also that whilst they are in our midst their duty lies in getting rid of their Western culture, to the extent that it comes in conflict with ours. You will see that even our self-interest requires us to observe *Ahimsa*. By *Ahimsa* we will be able to save the cow and also to win the friendship of the English. I want to purchase the friendship of all by sacrifice.

What profit would it be, if I succeed in saving a few cows from death by using force against persons who do not regard cow-killing as sinful. Cow-protection then can only be served by cultivating universal friendliness, i.e. *Ahimsa*. Now you will understand why I regard the question of cow protection as greater even than that of Swaraj. The fact is that the capacity to achieve the former will suffice for the latter purpose as well.

CANDHIJI ON CATTLE WEALTH

In no other country in the world save India are cattle a burden on the land or its people. One may say that in such countries there is no such thing as superfluous cattle. By judicious management, India's cattle need not become a burden on the land and that their slaughter can be made so dear as to enable only those people to slaughter who will do so for luxury, or in the name of religion.

Cattle at the present moment go to the slaughter houses because of our criminal negligence and want of proper knowledge. The saving of an enormous number of cattle is more a problem of economics than religion; and there is no conflict between them. A religion which is in conflict with fundamental economics is bad, and in the reverse way economics that are in conflict with fundamental religion are also equally bad.

From the Western countries we can learn a great deal about cattle economics apart from their slaughter for food. If the nation, or say Hindus, would forego profits from cattle-keeping the self-denial would be enough to keep cattle during the natural term of their lives even after they cease to give us a return in the shape of milk or labours, that were and will be ever formed.

—Gandhiji in the Young India, 7th May 1925.

THE PLIGHT

Cow protection problem is a task bigger than perhaps the struggle for Swaraj in as much as it is of an entirely religious character. An error in this would be well nigh irretrievable for the simple reason that the cow we propose to serve is a dumb creature. She cannot complain, she has no voice to raise a protest and even break heads to settle a grievance. But the cow is entirely at our mercy. She consents to be led to slaughter, and to be embarked for Australia and gives her progeny to carry whatever burden we want it to carry, in sun or rain. The task is thus immense and I have undertaken it with a pure sense of duty.

The cow won't impale you on her horns for mismanagement or similar blunders. We have therefore to do the work in fear of God and with the full consciousness of the sacredness of the task. My meaning of cow protection includes the protection and service of both man and bird and beast. It presupposes a thorough eschewal of violence. A Hindu, if he is a true Hindu, may not raise his hand against a Mussalman or Englishman to protect the cow. If we once succeed in the protection of the cow proper, we shall some day be able to serve the cow in all creation. And if we succeed in Bombay, we shall thereafter succeed elsewhere. But to do so we have to bring both our reason and our heart to bear on the task. We have to realise that we have not so much to save the cow from the butcher's knife as from our own. And for that we grasp the economics of the thing.

Nowhere in the world is the cow so feeble, and her yield so little as in India. Nowhere is she so badly treated as she is to-day in India by the Hindus. I am saying this not to excite you. I am stating the barest truth, without the slightest exaggeration. It is the Hindus therefore who have to fulfil their obligations in the matter. The Mussalmans will do their duty after we have done what is obviously ours.

THE RIGHT WAY

Cow protection to me is not mere protection of the cow. It means protection of all that lives and is helpless and the weak in the world. India is one country in the world where cow protection is a religious obligation for over 21 crores of her people. And yet the cattle of India are miserable-looking, ill-treated, underfed, over-burdened, deteriorating, and are even said to be a burden on the land. Nowhere else perhaps do cattle give less milk than they cost to feed and keep.

How can this state of things be remedied? Certainly not by multiplying Cow Protection Societies which do not know their business, most certainly not by fighting the Mussalmans about things which they cannot help even if they would. I am thinking of the cattle economics. If we take care of them, the

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rest will take care of itself. If cattle are an uneconomic burden and if one can set condition right, nothing can prevent them from perishing or being slaughtered. The problem therefore is to study the question calmly and without sentiment. Religion without the backing of reason and enlightenment is a worthless sentiment which is bound to die of inanition. It is knowledge that ultimately gives salvation.

Devotion to the cow divorced from knowledge is the surest way of imposing premature death on her. Therefore one man with an accurate knowledge of cattle problem, if he has the heart for the cow, presents in his own person all the Cow Protection Societies.

The meaning of cow protection which can bring one *Moksha* must be much wider and far more comprehensive than is commonly supposed. The cow-protection which can bring one *Moksha*, from its very nature includes the protection of every thing that feels. Therefore in my opinion, every little breach of the *Ahimsa* principle, like causing hurt by harsh speech to any one, man, woman or child, to cause pain to the weakest and the most insignificant creature on earth would be a breach of the principle of cow protection *

—Mahatma Gandhi's Belgaum Speech, 1925.

OUR PINJRAPOLS

Then in India we have the system of Pinjrapols. The way in which most of these are managed is far from satisfactory. And yet, I am sorry to observe that the people who are mostly responsible for them are Jains (and Vaishnavas parenthesised by the author) who are out and out believers in *Ahimsa*. Well organised, these Pinjrapols ought to be flourishing dairies supplying pure good milk at cheap rate to the poor. I am told however that even in a rich city like Ahmedabad there are cases of the wives of labourers feeding their babies on flour dissolved in water. There cannot be a sadder commentary on the way in which we protect the cow than that in a country which has such an extensive system of Pinjrapols the poor should experience famine of pure good milk. That I hope will serve to explain to you how our failure to protect the cow at one end of the chain results in our skin and bone starvelings at the other.

—From Gandhiji's Belgaum Speech, 1925.

KIND CRUELTY

If the bullock had a tongue to speak and were asked which fate he preferred —instantaneous death under the butcher's knife or the long drawn agony to which he is subjected, he would undoubtedly prefer the former. .

* The term 'Go' in Sanskrit has several meanings, besides the cow. It also means senses. Hurting senses of any feeling creature whether of the mineral, vegetable or animal kingdom amounts therefore to the breach of *Ahimsa*. *Gohatya* means wounding of feelings as also killing the cow. Author.

GANDHIJI'S VIEWS

The practice of blowing (the milch cow for more milk) is loathsome. The people who do this are Hindus. Again nowhere in the world is the condition of cattle so poor as in India. Nowhere in the world would you find such skeletons of cows and bullocks as you do in our cow-worshipping India. Nowhere are bullocks worked so beyond their capacity as here. I contend that so long as these things continue we have no right to ask anybody to stop cow killing.

In *Bhagwat* the illustrious author describes the various things which have been the cause of India's downfall. One of the causes mentioned is that we have given up cow-protection. To-day I want to bring home to you if I can the close relation which exists between the present poverty stricken condition of India and our failure to protect the cow. Is it not a just nemesis for our belying of our religion?

DAIRIES & TANNERIES

Establishment of Tanneries and Dairies may seem too practical, too earthly to you. But religion which takes no account of practical affairs and does not help to solve them is no religion. That is what the life of *King Janak* teaches us. And that is why I am putting a religious matter before you in a practical form. We shall have to take control of the milk supply, and also of the disposal of dead cattle. Should we then hesitate to control tanneries in a religious spirit? I tell you we have come to this state because we would not take care of disabled and dead cattle and because we exported them to America.

Let us therefore establish Tanneries and look to the proper disposal of dead cattle. Let us establish dairies and ensure a cheaper and better supply of milk. I will not hesitate to seek co-operation of the Government in this matter, for I know they have got the services of good dairy experts. If we do these two things then alone it is possible to stop the avoidable slaughter of thousands of cattle annually.

(From Gandhiji's speech at Madhav Bag, Bombay while presenting for approval, the Draft Constitution of the All India Cow Protection Association, 28th April, 1925)

OUR CATTLE WEALTH

This is being written on Bakr-Id day—a day of rejoicing for Mussalmans and grief for Hindus. It is a day of grief for Hindus because their Mussalman brethren slaughter cows for sacrifice though they know that the cow is an object of worship and veneration for Hindus. Though I hold the cow as much in veneration as any Hindu and am responsible for bringing into being the (in my opinion) only scientific society for effectively protecting the cow. I have never sympathized with the Hindu grief and the implied anger against Mussalmans on Bakr-Id. The latter are undoubtedly foolish and obstinate in that they slaughter

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the cow and needlessly wound Hindu susceptibility. For there is no religious obligation on the part of Mussalmans to kill the cow on Bakr-Id or any other day. I have heard some Mussalmans arguing that Hindus by their worship of the cow make it obligatory on them to kill the cow. This borders on compulsion. But if the Mussalman is foolish and obstinate, the Hindu is criminally ignorant and indirectly becomes party to the slaughter of the cow by the Mussalman. For cows are sold by Hindus as a rule. Hindu grief and anger are uncalled for. Hindu ignorance is responsible for many more deaths of cows than the deaths caused by the Mussalmans' slaughter of the cow for one day in the year. Be it noted that Hindus are apparently quite reconciled to cow slaughter on days other than Bakr-Id.

I have in my possession startling authentic figures showing the annual slaughter of cattle and deaths from natural causes. According to the live-stock census of 1935 about 80 per cent die naturally and 20 percent are slaughtered. The percentage of natural deaths, however, varies according to locality. Where grazing conditions are good and cultivation careful, natural deaths fall as low as 7 per cent, and in famine zones they rise to 30 per cent. In the Bombay Presidency (British) it is estimated that there were, in 1935, 74.5 lakhs of cattle. Of these 9 lakhs died naturally against 2 lakhs by slaughter, i. e. 12 per cent against 3 per cent. In 1935 in British India including Bengal and Bihar and Orissa there were over eight crores of cows against just under three crores of buffaloes. Comparison between the censuses of 1935 and 1930 shows that buffalo wealth is on the increase three times that of the cow.

Now it is common knowledge that the cow is generally owned by Hindus. If they removed their unpardonable ignorance, they could easily prevent many deaths from natural causes. Time was when the number of cows was the measure of a man's wealth. To-day the cows are a drag on a man's possessions. It is almost like depreciation of currency. The only difference is that prevention of depreciation of cattle or rather cow currency is possible by internal effort. The effort is threefold.

(1) No waste of energy over persuading Mussalmans to give up cow-slaughter whether for sacrifice or food. They must be put on their own honour.

(2) Exclusive concentration on improvement of the cow and therefore giving up of buffalo milk and ghee.

(3) Exclusive use of dead cattle, hide and free use other than for food of all the parts of carcasses, and improvement in tanning.

The material for improvement is ready at hand in the numerous pinjrapoles and *gaushalas* covering the whole land. The only thing needful is to remove certain prejudices and to conduct these institutions on sound scientific lines.

—Harijan Feb. 27, 1937.

VILLAGE TANNING & ITS POSSIBILITY

Village tanning is as ancient as India itself. No one can say when tanning became a degraded calling. It could not have been so in ancient times. But we know today that one of the most useful and indispensable industries has consigned probably a million people to hereditary untouchability. An evil day dawned upon this unhappy country when labour began to be despised and, therefore, neglected. Millions of those who were the salt of the earth, on whose industry this country depended for its very existence, came to be regarded as low class and the microscopic leisured few became the privileged classes, with the tragic result that India suffered morally and materially. Which was the greater of the two losses it is difficult if not impossible, to estimate. But the criminal neglect of the peasants and the artisans has reduced us to pauperism, dullness and habitual idleness. With her magnificent climate, lofty mountains, mighty rivers and an extensive seaboard, India has limitless resources, whose full exploitation in her villages should have prevented poverty and disease. But the divorce of the intellect from body-labour has made of us perhaps the short-lived, most resourceless and most exploited nation on earth. The state of village tanning is, perhaps, the best proof of any indictment. It was the late Madhusudan Das who opened my eyes to the great crime against a part of humanity. He sought to make reparation by opening what might be called an educational tannery. His enterprise did not come upto his expectations, but he was responsible for the livelihood of hundreds of shoemakers in Cuttack.

Tanning requires great technical skill. An army of chemists can find scope for their inventive talent in this great industry. There are two ways of developing it. One for the uplift of Harijans living in the villages and eking out a bare sustenance, living in filth and degradation and consigned to the village ghetto, isolated and away from the village proper. This way means part re-organisation of villages and taking art, education, cleanliness, prosperity and dignity to them. This means also the application of chemical talent to village uplift. Tanning chemists have to discover improved methods of tanning. The village chemist has to stoop to conquer. He has to learn and understand the crude village tanning, which is still in existence but which is fast dying owing to neglect not to say of support. But the crude method may not be summarily scrapped, at least not before a sympathetic examination. It has served well for centuries. It could not have done so, if it had no merit.

Well, here is the use for high intelligence and the art of dissection. Here is also a mighty step in the direction of cow preservation. The cow must die at the hands of the butcher, unless we learn the art of increasing her capacity of milk-giving, unless we improve her stock and make her male progeny more useful for the field and carrying burdens, unless we make scientific use of all her excreta as manure and unless, when she and hers die, we are prepared to make the wisest use of her hide, bone, flesh, entrails, etc.

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I am just now concerned only with the carcass. It is well to remember here that the village tanner, thank God, has to deal only with the carcass, not the slaughtered animal. He has no means of bringing the dead animal in a decent way. He lifts it, drags it, and thus injures the skin and reduces the value of the hide. If the villagers and the public knew the priceless and noble service the tanner renders, they will provide easy and simple methods of carrying it, so as not to injure the skin at all.

The next process is flaying the animal. This requires great skill. I am told that none, not even surgeons, do this work better or more expeditiously than the village tanner does with his village knife. I have inquired of those who should know. They have not been able to show me an improvement upon the village tanner. This is not to say that there is none better. I merely give the reader the benefit of my own very limited experience. The village tanner has no use for the bone. He throws it away. Dogs hover round the carcass, whilst it is flayed, and take away some, if not all, of the bones. This is a dead loss to the country. The bones, if powdered fine, apart from their other uses, make valuable manure. What remains after the dogs have taken away their share is transported to foreign countries and returns to us in the shape of handles, buttons, etc.

The second way is urbanising this great industry. There are several tanneries in India doing this work. Their examination is outside the scope of this article. This urbanisation can do little good to the Harijans, much less to the villages. It is a process of double drain from the villages. Urbanisation in India is slow but sure death for her villages and villagers. Urbanisation can never support ninety per cent of India's population, which is living in her 7,00,000 villages. To remove from the villages tanning and such other industries is to remove what little opportunity there still is for making skilled use of the hand and the head. And when the village handicrafts disappear, the villagers working only with their cattle on the field, with idleness for six or four months in the year, must, in the words of Madhusudan Das, be reduced to the level of the beast and be without proper nourishment, either of the mind or the body, and, therefore, without joy and without hope.

Here is work for the cent per cent. Swadeshi lover and scope for the harnessing of technical skill to solution of a great problem. The work fells three apples with one throw. It serves the Harijans, it serves the villagers and it means honourable employment for the middle class intelligentsia who are in search of employment. Add to this the fact that the intelligentsia have a proper opportunity of coming in direct touch with the villager.

M. K. GANDHI

(Harijan, Sept. 7, 1934)

CHAPTER IX

PIONEERS OF JEEVADAYA

History of Humanitarian Movement

Horrors of Cruelty in India

Religious Brutalities

Slaughter House Horrors

Cruelties for Food.

Fanaticism its own punishment.

Reformers Beware



WHO IS DEAD?

He is dead who sees nothing to change,
No wrong to make right,
Who travels no new way or strange,
In search of the light '
Who never sets out for a goal,
That we see from afar,
But contents his indifferent soul,
With things as they are

In Europe the man who formerly wished to perpetuate his name built a 'Cathedral', in modern America he builds a 'University', in modern India he builds and maintains a 'Gowshala' where the aged, deformed, sick, and decrepit cows can be sure of being well cared for until they die a natural death. Much more is being done in India by the Hindus to preserve the cattle than to preserve the sick, decrepit and ill-nourished men and women

—Sam Higginbottom (Gospel & the Plough)

As a student of economics it is left to one to point out that the enormous number of cattle which do not pay their way are a very serious economic drain to a country as poor as India. IT IS NOT MORE CATTLE BUT BETTER CATTLE THAT INDIA NEEDS

HISTORY OF HUMANITARIAN MOVEMENT

THE BOMBAY HUMANITARIAN LEAGUE—ITS WHY AND WHAT



To a casual observer who knows the ancient Aryan culture and the principles of various religions prevailing in India having *Ahimsa* as Basic principle, the propagation of *Ahimsa* would seem to be like "carrying coal to New-Castle." But the undesirable perversion of those noble principles and practices of the highly spiritual India, during past century, created an urgent need for an organised extensive propaganda to educate public opinion in favour of various humanitarian matters. It should be noted that India's contact with the Western Nations, the system of education and the so-called civilisation, seem to have proved destructive of the ancient high culture and nobler nature of the Indian Nation. The educated class, filled with Western notions and ideals rose to condemn what was best in their ancient culture and thoughtlessly began to adopt Western modes of life which brought in its train selfishness, individualism and disregard for the rights of other beings both men and animals. Killing for food, fashion and sport, enormously increased and thousands of poor dumb creatures are now mercilessly slaughtered under these pretexts. The infection of *Himsa* spread far and wide. The educated class sacrificed animals at the altar of food, fashion, sport and science while the illiterate masses indulged in the custom of offering animals to deities in the name of religion. No efforts were made to check this spiritual destruction of humanity and the streams of blood of innocent creatures. Slaughter houses after slaughter houses are being opened and killing of animals has been a licensed business.

Even in spite of the undesirable change, before the year 1910, few people or the Public Bodies in India revolted against it or took any appreciable measures save those of maintaining infirm cattle in Pinjrapoles and Goshalas. Some Societies like the Jain Svetamber Conference at Bombay, The Parsi Vegetarian Society and some Humanitarians like Shriyut Labhshankar Laxmidas and others did raise their voice occasionally but it proved too feeble to check the rising tide of *Himsa*. It was at such time that Sheth Lallubhai D Jhaveri was moved to action by divine inspiration.

Mr Labhshankar Laxmidas, the well known humanitarian, met Sheth Lallubhai D Jhaveri and suggested to him to start an Association to combat the evil of *Himsa*. Sheth Lallubhai took up the suggestion and started Shri Jyadaya Gnanprasarak Fund alias Bombay Humanitarian Fund on 20th September 1910 and taking upon himself the risks and responsibilities as Honorary

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Manager of the said Fund he launched a vigorous campaign against the grave evils of *Himsa*. Thus began the present Bombay Humanitarian League on 20th September 1910 with its headquarters at Bombay.

In the infancy of this movement it demanded great sacrifices and services day and night which its devoted Founder never spared. He carefully nourished the movement and almost from those days he began to devote himself solely to the promotion of the aims and objects of the Fund namely to educate public opinion in favour of humanitarian principles and the advantages of vegetarian diet especially from the considerations of health, economy and science.

In the early part of the movement, Sheth Lallubhai had none to help him in his noble undertaking save a few veteran humanitarians like Mr Labhshankar, the late Sheth J. J. Vimalalal, Sheth Mohanlal Maganbhai Javeri, Mr. K. J. B. Wadia and others. Many difficulties had to be faced. But Sheth Lallubhai bravely faced them all knowing no despair. In the beginning he carried on the propaganda work almost single handed.

GOD HELPS THOSE WHO HELP THEMSELVES came out to be true with this work also. Sheth Lallubhai's honesty of purpose, resolute will to advocate the cause of the dumb and selfless services and sacrifices brought to him many friends and sympathisers in course of time and a rich store of valuable literature was made available to him for the purpose by the co-operation of the 'Order of the Golden Age' the pioneer Humanitarian Society of the West. It was almost from the inception of the League that the promoters of that Society especially Mr. Sydney H. Beard and his colleagues helped the League by supplying their valuable literature at reduced rates. In the early years the League ordered out lacs of copies of their booklets on diet and sent them round all over India.

Apart from this, the booklets were translated in various dialects prevalent in India and lacs of such tracts were also freely distributed. Preachers were sent round and series of articles appeared in Press. A whirlwind of humanitarian thought and literature overtook India with the marvellous results that a strong public opinion was created. Sympathetic response poured in from every quarter. Thousands of letters were received from people who became vegetarians life long. Several Societies came forward to propagate the cause in their respective areas. Selfless workers undertook to carry message of mercy every where. Thus only during first two years, fine field was prepared for further organised efforts. Sheth Lallubhai Jhaveri's joy knew no bounds. He planned the future programme with his fellow workers on a much extensive scale and the activities of the League multiplied thenceforward.

Efforts for diffusion of literature were then supplemented by propaganda work, Prize Schemes, Appeals to the Ruling Princes, for prohibition of Animal

Sacrifice and to the Municipalities and Government to prohibit slaughter of animals, efforts to establish new societies etc. These activities were continued from the year 1912 and onwards with very glaring results.

CONSTITUTIONAL BODY

In the year 1918 Shetli Lallubhai and his colleagues could measure the great popular interest awakened locally and in moffusil by the marvellous results achieved by all the departments of the Fund and thought it necessary to convert the Fund into a constitutional public body with a view to enhance public interest in the conduct of the activities of the Fund and especially to associate young and educated men, with the movement. With this view in end the Jivdaya Gnana Prasarak Fund alias the Bombay Humanitarian Fund, under which title all the activities were carried on so far, was converted into The Bombay Humanitarian League, alias Shree Jivdaya Mandal in the year 1918 with a regular constitution, membership, committee and trustees and continues to work for the following aims and objects:

- (a) To adopt means for protecting animals as well as birds and fish from all kinds of cruelty.
- (b) To educate public opinion regarding the advantages of vegetarian diet from the points of view of health, economy and mercy.
- (c) To appeal to the authorities as well as to the people to discontinue cruel fashions and ceremonies
- (d) To take up strictly non-political questions of human welfare.

The first elected President of the League was Mr. B. G. Horniman, the wellknown friend of humanity. The League made marvellous progress with rapid strides during his regime and in all the subsequent years. Some of the methods of work adopted by the League are as under.

METHODS OF WORK

Ever since its inception the League concentrated its energies on educating public opinion in various ways with a view to revive humane instincts and a genuine sense of duty to our sub-human friends. Its activities may be classified under the following heads —

(1) Diffusion of literature, (2) Propaganda work, (3) Educating the young generation, (4) Prohibition of animal sacrifice, (5) Efforts for suitable legislation for protection of animals, (6) Animal rescue department, (7) Human welfare and miscellaneous activities

The principal forms of cruelty prevailing in India, which the League and its sister Institutions have to combat are briefly described here.

HORRORS OF CRUELTY

"All souls above him that doth never take
A life, and says 'of flesh do not partake'."



In virtue of his unique position in creation, as a thinking and speaking animal, and in the plenitude of his power, man imagines that he is the lord of the beautiful domain of animals, and that the rest of God's creatures are no more than slaves created simply to minister to his convenience and comfort. If he claims dominion over the lower animals, he must be merciful in exercising his right over them. It is unjust and cruel on his part to wield with an iron hand his sceptre of ascendancy over his weaker cousins that are

dependent on him. All that he is entitled to, is to use them, if at all, and not to ill-use them. If he has rights and privileges to enjoy as the sovereign of the animal kingdom, he has duties and responsibilities also towards it. In his authority as 'the roof creation,' he has no right to inflict needless and avoidable pain upon the lower animals.

It is sad to think that the advance of civilization seems ever to be accompanied by an aggravation of certain evils, and in no instance is this more marked than in the terrible amount of suffering unnecessarily inflicted on, and meekly endured by, the sentient beings of the lower order. Implements of torture and weapons of destruction have increased with the progress of culture, and the horrors perpetrated upon our voiceless brethren have multiplied *pari passu*. "Live and let live" should be the guiding principle of life. In the philosophy of conduct propounded by every religion worth the name, no nobler course has been chalked out than that of non-injury, crisply expressed in the language of the Bhagavad-Geeta, *Ahimsa-paramo-dharma* (*Non-injury is the highest virtue*).

The horrors inflicted on poor, dumb and innocent animals may be traced to any one or more of the following traits of character on the part of the perpetrators, viz., sheer ignorance, callous indifference, whimsical fashion and simple brutality. Whatever be the cause, the fact is undoubted that cruelties varying in intensity and horror are incessantly inflicted on the inarticulate creatures

The principle involved in the infliction of cruelty is that of 'might is right' which is opposed to justice, humanity and dignity. It is the stock logic of the wolf in the story, and it does not befit even the Bushman and the Hottentot. Love of life and feelings of pleasure and pain are common to all sentient beings—human as well as sub-human. The lives of the lower creatures are as dear and precious to them as ours are to us. Each animal is useful to us in its own way. God has not created anything in vain, but, of course, nothing is absolutely useful and harmless or perfectly useless and harmful. Even beasts of prey and venomous reptiles may perhaps be found useful indirectly, only if we take the trouble to unravel the mystery that envelops them. We must gain further knowledge as to this or that creature so that we may form reasonable anticipations of the consequences we are bringing down on our heads, when we set about to exterminate this or that race of animals. We are not yet sure that even wild and ferocious brutes, not to say the plague-carrying rats and poisonous snakes, are not blessings in disguise. It is impossible to live without the assistance of some of the lower creatures. Birds, nature's warblers, entertain us with sweet music, and wake us up in the early morning. They carry the seeds of trees and plants from one place to another, and help towards the growth of the vegetable kingdom. Oxen and horses help us in draught, agriculture and trade. Cows yield us sweet milk, sheep give us wool. Dogs keep faithful watch over our houses. Donkeys carry loads. Man, ungrateful man, returns kicks for the kisses of valuable service rendered to him, nay, he stands as an archdevourer, pre-eminent over the fiercest animals of prey. Let us suppose that we had exchanged places for a moment with the brutes, they having the power of life and death over us, would we not curse and revolt against them?

BIRD VICTIMS

Among the horrors committed on the feathered tribe, the ill-treatment meted out to Fowls and Ducks for food purposes may be mentioned first. Fowls and ducks are carried to markets with their feet tied together and with their heads hanging down. They are crammed into baskets without standing room and ventilation. Great injury is done to birds when their nests are removed with their eggs or young ones. How much pain boys are giving when they take to the catapult and to the cruel practice of bird nesting! The caging of birds deprives them of their liberty. The miseries of prison life are gruesome, more so are they to feathered captives whose natural birth-right is to fly in the sky and to pour forth their melodious notes all their way.

CRUEL FASHION

The whimsicalities of fashion are a fruitful source of cruelty to some of the bright plumaged denizens of the air. Their plumage is an eyesore to the 'noble and 'humane' ladies of the Western continent. The feathered skins of wrens, humming-birds, nightingales, larks, etc. go to decorate ladies' head-dresses. These poor little birds are for the most part skinned while alive.

SILLY SPORTS

Shooting birds, in the name of sport or science, is cruel beyond words. A study of birds and their personal habits fails of its finest fruit, if it does not lead one to regard the harmless creatures with a kindly and sympathetic interest which tends to make all needless sacrifice of their lives more and more repugnant to one's feelings. The separation of the young birds from their parents is pitiable. Small birds are caught and killed principally as articles of food. The practice of capturing and killing birds, besides being cruel, is injurious to the country. In the economy of nature, birds have a place which none else can fill so well and a mission which others cannot discharge so effectively.

INGRATITUDE

The treatment accorded to some of the most useful domestic animals is far from being kind and considerate, nay, it is even positively and deliberately cruel to them. The horse, pre-eminently the most useful animal to man, is the one upon which is inflicted the greatest amount of cruelty. The commonest form of it is the working of the horse while suffering from lameness in one form or another. The hackney which plies for hire though worn and weary with a useful life, is compelled to do the utmost work he can: his legs may be stiff and lame; shoulders rubbed and sore; he may be worn-out and debilitated, his knees broken and sight dim; he may be sore back. There is no physician to bind his wounds. The lash is perhaps all the cure that is left to him. He may have scant rest, scant bed and scant fare. He may be driven in sun and rain, summer and winter, day and night, morn and eve, when the wintry winds blow and when the road is all slushy. To employ any animal that is past work is barbarous. But it is pathetic that unserviceable horses that are incurably ill are condemned by their owners to be destroyed. Is this the reward for long and faithful work? It is inhuman to prevent them from having their own natural death. If the owner is unwilling or unable to maintain old or useless bullocks and horses, he could save them from the hands of the slaughter and the hackney driver by getting them admitted in the Pinjrapole.

CRUELITIES TO COW AND BULLOCK

The cow, as well as the bull to a certain extent, by the custom of long ages, is considered a sacred animal in India. Yet cattle are subject to no small ill-usage even in the lands of Hindus. The treatment of the animals elsewhere is worse. Cattle are wretchedly thrashed and half-starved and made to draw weights so misquitously out of all proportion to their strength. Carters and drivers consider savage yells, horrid oaths, pricks with the goad, and blows with the butt-end of the whip, are good substitutes for fodder to keep up the strength of their team and to stimulate them to supernatural exertions. When milch cows are driven to market for sale, they are found to suffer with distended udders and apparently to suffer pain, their heartless proprietors

having refrained from milking them in order to give the animals the appearance of being good milkers. Sometimes their teats are plugged to prevent milk from flowing. Tying thick pieces of wood round the neck impedes the rogue bulls and cows from running away. But it is a form of cruelty. The horns of cattle are sawed off, and the animals are deprived of their weapons of defence bestowed on them by nature. The head of the animal is cruelly hobbled to the foot in order to prevent it from straying from the fields in which it is grazing and from the road along which it is driven. In railway trucks and in ships, cattle are very badly treated. They are pent up closely together, with no means to shift their position or to lie down. With this privation a long journey by train or by steamer is a protracted piece of cruelty. In such journeys they are not given even a sufficient quantity of water to drink. Calves sent by carrier's carts to butchers are bound on the cart with their heads hanging down, and thus they suffer for hours.

RELIGIOUS BRUTALITIES



In the name of Religion, no less than in the name of sport or science there is a considerable shedding of blood of the beasts of the field and the birds of heaven. In order to find an excuse or justification for his craving for the carcasses of the groaning creation, man has attributed blood-thirstiness to God, and most cruelly slaughters hundreds of sheep, pigs, buffaloes and poultry in places of worship. During the festive occasions, many of the Kali and Madan temples in India are at best only religious abattoirs where very many poor animals are slaughtered in any fashion with impunity. In these temples, at an early hour, a kid between one and two months of age is cut and offered, by way of breakfast to the presiding Deity. For a sumptuous dinner in the afternoon, many a full grown goat or lamb, pig or heifer is sacrificed. The guileless lamb is tempted with a branch of green leaves for it to eat, and when it extends its neck to nibble the leaves held out by some one, down goes the sharp cutlass of the devil-dancer, when lo! its neck goes down smeared with blood. The mournful bleating of the poor kid or lamb does not reach the ears of the revelling votaries. In sacrificing the pig, it is thrown down on its back, its legs being tied to four plugs driven into the ground. The man who plays the high-priest plunges a finely whetted dagger into the stomach of the creature and draws it up to the neck. While the poor thing is travailing in deep agony, the man scurfs over its cracking bones, rent entrails and gushing blood. He pulls out its bowels and throws them round his neck, as it were in triumph and drinks its red blood, cutting several capers in joy. During the Mahomedan festival of the Moharum, some Mussalmans and low class Hindus paint their person with various colours and masquerade themselves as tigers, leopards etc. The 'human tiger'—entertains his spectators with his cruel pranks with live goats by lifting them with his teeth and throwing them up in the air several times. At last the animal is gallantly cut with a knife. It is a crude and cruel practice among certain classes of Hindus, vegetarians as some of them are, to cremate a small cock along with the remains of any human being, if the latter die on a Saturday, called *Karunal* or Black Day, lest some other member of the bereaved family should follow the deceased to the grave in the near future, such being the superstitious belief prevalent among them.

SLAUGHTER-HOUSE HORRORS

The slaughter-house is the most desecrated and uncleanly of spots on earth. If on earth there is hell, it is this; it is this. Who would not shudder, except, of course, trained butchers, to think of the ghastly sight of the severed heads, mutilated trunks, and blood-besmeared limbs of the sheep and the kid, of the cow and the calf, of the pig and the rest? Who can view with equanimity the sight of thousands of lambs and goats, the meekest and gentlest of God's creatures being converted into mountains of meat, pyramids of bones and rivers of blood, The abattoirs of the world are an insult to our vaunted civilization and to true Christian piety. Shocking cruelties are perpetrated in the shamble.

"NO EAR CAN HEAR, NO TONGUE CAN TELL,
THE TORTURES OF THAT INWARD HELL."

These words of Byron can be no less true of the abattoir than of the tavern. Meat-eating alone contributes to the slaughter of the dumb creation. The shamble leads to the tavern which in its turn hurls its victim to the biot hel and to eternal perdition. What wonderful notions of cruelty have we! Driving a horse or a bullock at double quick on a rugged road or tying the leg of a bird with a piece of string and pulling it while flying, or cutting the tail of a dog is deemed to be more cruel than butchering millions of poor creatures, hunting the beautiful and harmless stag and shooting the gentle dove and other birds for temporarily stuffing man's stomach. Are the agonies of slaughter less painful than the other horrors inflicted on sentient beings? Is pain to be measured by "extensity" and not by "intensity" as well? All creatures are aware of the pangs of death. Such agonies are the most unbearable. No animal can be killed painlessly. Even the tiniest insect trembles at the prospect of death. It tries to avoid that inevitable moment. There is no greater pain than death. It may be that you are able to separate life from an animal in one minute. But into that minute are crowded all the horrors of a lifetime. Custom and habit are factors to be reckoned with in such matters. It is these that determine the course of thought among nations as in individuals. One who is a vegetarian by birth and breeding cannot help gaping in awe and wonderment at the very thin partition there is between modern 'civilization' and old-world 'barbarism' in the matter of slaughtering animals for food.

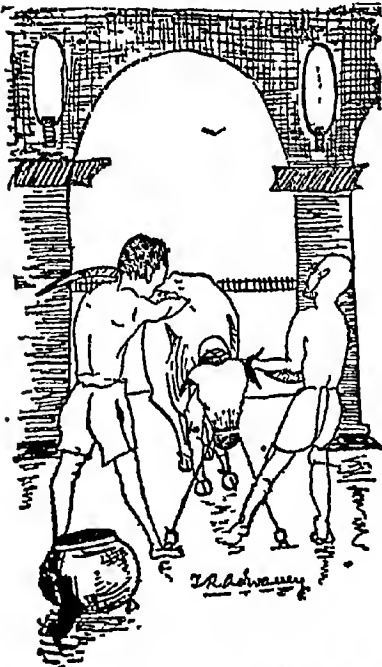
CRUEL TREATMENT IN TRANSIT

The loud, continued and painful lowing uttered by cattle when driven to be slaughtered is most heart-rending. There is often dreadful cruelty connected with the transport of the miserable animals both by land and sea, and in the slaughtering itself. Lowing herds of thirsty cattle and bleating flocks of sheep limp on foot sore and weary to their doom. Birds and beasts are bred up only to be slaughtered for daily providing man with a piece of meat to swallow. In their transit, the cattle and sheep are brutally thrashed with ropes and sticks. In

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cattle ships the animals receive the worst kind of treatment. "Paraffin oil is poured into their ears which on reaching the brain makes the brutes shriek with pain. Occasionally their ears are stuffed with hay and then set fire to." The tails are often snapped. In forcing them up or down steep gangways and ladders, the animals are belaboured with heavy sticks. They fall down on shipboard and get trampled on; their ribs and hips are broken. They are giving little water in transit and in ships they have not sufficient ventilation. During the night previous to the market day they are made to do long journeys and in the fairs, they are kept standing during the day, without food and water. They pass to the abattoir, yapped at by watch dogs and goaded by the driver.

HOW SLAUGHTERED ?



'They are paid to hammer on the head, throat, cut and kill the best will soon be dead''

In the slaughter-house the cattle are mercilessly laid hold of one by one. Their pleas for liberation and cries for life are unheeded. In vain they struggle to escape. Butchery is done in the presence of other animals to be victimised immediately. Have not these animals eyes to see what has been done to their companions? It is a horror of horrors that they should be butchered not singly or separately but in the sight of other animals. Often the victim refuses to advance to its doom; the murderer twists its tail, breaks its horns and puts out its eyes. The butcher twists and turns the neck of the lamb and cuts the spinal cord, allowing it to bleed and die. If the knife is not sharp enough to sever the head at once, he hews the victim at leisure and causes mortal pain to the animal, until the head is cut off.

The animal bellows and roars and dashes its body from side to side. The rolling of its eye balls, the twitching of its muscles, the champing of its jaws, the protruding of its tongue, the moving of its lips and the quivering of its tail make a sight which few can stand. But why pursue this harrowing spectacle which is too gruesome to be described in detail?

VICTIMS OF VIVISECTION

The horrors of the slaughter-house pale into nothing when we turn to the shocking and inhuman tortures called scientific experiments practised on the dumb and defenceless members of the sub-human race in research laboratories

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where vivisectioning doctors brew, boil and bake animal blood and other filthy matter. Human victims also are sacrificed, covertly and overtly, to the blood-thirsty Goddess of Knowledge-at-all-costs, in that new-born babes, pregnant women and poor patients are treated as 'maternal' for the 'scientific vampires' to practice upon. They aver that they are "not even cruel only to be kind" and that "they inflict pain in order to prevent greater future pain or death" and that "mere infliction of pain cannot be cruelty." Of course, it is no 'cruelty' to the 'medical wizards' themselves, but the operations on live animals mean to these creatures fiendish pain in exquisite detail. If beating and branding, mangling and wounding, starving and burning, shooting and stabbing animals and similar barbarities such as injecting poison into their quivering bodies do not constitute 'cruelty,' what else does it make in the estimation of the superior scientists in charge of the so-called research institutes which are veritable infernoes for the mute creation. "Even the black sorcery of magic," says Mrs Besant "has no horrors so terrible as those of the vivisectioners." To quench the insatiable thirst for new 'scientific knowledge' and 'for the sake of mere experiment,' from which, "nothing, absolutely nothing, is gained," laes after laes of mice, chickens, geese, rabbits, cats, dogs, goats, calves, monkeys, guinea-pigs and horses are sacrificed at the altar of research faddism. This fiendish work has gone on for long years past without any avail, and has been extended to human beings also. The temporary good derived from such productions as sera, vaccine, etc. is a delusion and a snare. Like the masses, the pseudo-scientists have their own pet superstitions. Scientific superstition is more far-reaching in its disastrous results than that of the ignorant masses.

On a careful perusal of what has been said above regarding the various forms of cruelties to animals it is evident that horrible cruelties are perpetrated to animals by man for man under the various pretexts such as food, fashion, sport sacrifice and science. As a matter of fact when all creatures hold life as obtained from God, the common Creator every sentient creature has an undeniable right to live his legitimate span of life. Man, even by his superior position in creation, does not get any right to kill his sub-human brethren for his self-interest, on the contrary it is obligatory on him to protect them. But unfortunately what happens now is that man kills animals for his food, and for fashion, sport, sacrifice to achieve personal gains and science. So far as fashion, sport and science are concerned, there is no justification in killing poor dumb creatures. The failure of Science in healing or saving ailing humanity by new methods of treatment, obtained by years of experiments, on poor dumb creatures by subjecting them to torturous deaths, should convince the World of the inhumanity and unjustifiability of the cruelties in the name of science.

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CRUELITIES FOR FOOD

Out of the many forms of cruelties mentioned above, those for food, are perhaps the most horrible. It has often been said that flesh diet being necessary, killing of animals for food is not criminal. The cruelties and horrors involved in the traffic of the flesh of sentient creatures, would have been terminated long ago, were it not for the prevalence of this popular delusion. No truly thoughtful and humane person, who is fully acquainted with the nature and extent of these barbarities, could feel it possible to justify them by any argument less weighty than that of "absolute" necessity. When this—the only adequate plea for human carnivoracity and the holocaust of suffering it entails—is shown to be baseless, the barbarous custom is at once recognised by cultured minds as being morally indefensible.

From scientific as well as ethical consideration, it has been sufficiently proved that there exists no necessity for flesh food and God never created man to be a carnivorous creature. That this revelation is both authentic and unmistakable and also capable of ocular demonstration, can be clearly seen from the undermentioned opinions of some of the eminent Doctors of Western country, and notwithstanding the erroneous idea upon the subject which may have been held or taught in bygone centuries, when ignorance was more prevalent, this unanswerable fact confronts us. Man is a frugivorous animal and neither his internal organs, his teeth, nor his external appearances, resemble, in any way, those of carnivorous animals.

UNNATURAL DIET: ANATOMICAL EVIDENCE

"The teeth of Man have not the smallest resemblance to those of the carnivorous animals, except that their enamel is confined to the external surface. He possesses indeed, teeth called canines, but they do not exceed the level of others, and are obviously unsuited to the purposes which the corresponding teeth execute in carnivorous animals. In the proper carnivorous animals the alimentary canal is very short. Thus we find, that whether we consider the teeth and jaws, or the immediate instrument of digestion, the human structure closely resembles that of the simiae (apes) all of which, in their natural state, are completely herbivorous."

Professor William Lawrence, F. R. S.

(Professor of Anatomy and Surgery to the Royal College of Surgeons).

"It is, I think, not going too far to say that every fact connected with the human organisation goes to prove that Man was originally formed a frugivorous animal. This opinion is derived principally from the formation of his teeth and digestive organs, as well as from the character of his skin and the general structure of his limbs."

Professor Sir Charles Bell, F. R. S.

"Anatomy, Physiology, and Diseases of the Teeth"

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"The Apes and Monkeys, whom Man nearly resembles in his dentition, derive their staple food from fruits, grain, the kernels of nuts and other forms in which the most sapid and nutritious tissue of the vegetable kingdom are elaborated, and the close resemblance between the quadrumanous and the human dentition shows that Man was, from the beginning, adapted to eat the fruit of the trees of the garden."

Professor Sir Richard Owen

In view of the above opinions it is clear that man is a frugivorous creature by nature and his natural diet therefore should be from the vegetable kingdom. Therefore to eat flesh-food in any form is to violate a fundamental law of our being and such a violation must be expected to bring penalty upon us. Man is violating physical law in this manner and the prevalence of disease, suffering and demoralisation, wherever such violation is taking place, points in an unmistakable manner to the manifestation of Cause and Effect.

From scientific considerations it has been found that due to larger percentage of uric acid and many other reasons, flesh diet is responsible for many diseases. A very large number of medical men, in Western countries, who have studied this matter of Diet, in relation to Health, are now fully aware of this fact and are forbidding their patients to eat animal flesh not only as a means of alleviating some of the common ailments, but also as a preventive of diseases of many kinds including cancer and appendicitis.

SOME OPINIONS OF EMINENT PHYSICIANS

"Prof William Lawrence, F.R.S., Professor of Anatomy and Surgery in the Royal College of Surgeons, London, England, in a lecture in the Royal College delivered one hundred years ago, in discussing the questions of the natural diet of man from the standpoint of his Anatomy, declared man to be naturally non-carnivorous. Said this eminent scientist "That many can be perfectly nourished, and their bodily and mental capabilities be fully developed in any climate by a diet purely vegetable, admits of abundant proof from experience."

"During the hundred years which have elapsed since the above statements by Professor Lawrence, the advance in favour of a nonflesh diet has steadily accumulated until at the present time there is no room for doubt as to the inadvisability of including flesh in the dietary."

FROM "GOOD HEALTH"

Alexander Haig, M.A., M.D., F.R.C.P. states "That it is easily possible to sustain life on the products of the vegetable kingdom needs no demonstration for physiologists even if a majority of the human race were not constantly engaged in demonstrating it and my researches show not only that it is impossible but that it is infinitely preferable in every way."

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"People who spend large sums on meat, quite expect us to believe in their sanity, and even to think they are leading good, useful and meritorious lives —If they are sane—and it is more charitable to believe they are not—they have not yet understood the meaning of life, and have regarded their body as a mechanical toy, compounded of merry-go-round and a Papin's digester, a machine without, thought, without pity, without judgment, without morality; with no past and no future.

"The number of people poisoned by meat in a year, quite apart from the uric acid of xanthine it contains, is probably considerable and for one who knows what he has been poisoned by and whose case gets into papers, there are probably scores that go unrecorded."

"The full evil effects of meat as a food will never be visible in their entirety till whole nation living on uric acid free food, with another similar nation still living as we do to-day. No meat eater has had or will ever have as fine blood or as free a circulation as all or any may have by living on bread and fruit, and thus is no problem in abstract science, but a fact visible to the eyes of all. Any one who will record his blood quality and its rate of circulation to-day, and again after eighteen or twenty four months on a correct diet, will be a cause of wonder to himself and to all who see him. Changes in blood and circulation carry corresponding changes in bodily power, endurance and activity, in mental power and activity in the sense of judgment, justice, estimation of self and of others and thus in morality."

It may be difficult to find any scientific reason why mankind should regularly include animal flesh in his diet."

THE LANCET, 18-1-30.

In order to secure a clear head upon an active body, I am of opinion that a man should give up eating all dead bodies and all preparations of them—all entrails, organs, muscles, blood and bones of dead animals under whatever fancy names they may be presented—and should carefully and wisely select his food from the products of the harvest field, the garden, the orchard and the forest, together with the same foods concentrated, predigested and stored in the form of milk and honey, butter, cheese and eggs."

Dr. Josiah Oldfield.

FLESH FOODS UNNECESSARY

"Flesh foods are not the best nourishment for human beings and were not the food of our primitive ancestors. They are secondary or second products, since all food comes originally from the vegetable kingdom. There is nothing necessary or desirable for human nutrition to be found in meats or flesh foods which are not found in and derived from vegetable products."

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"A dead cow or sheep lying in a pasture is recognised as carrion. The same sort of a carcass dressed and hung up in a butcher's stall passes as food! Careful microscopic examination may show little or no difference between the fence corner carcass and the butcher shop carcass. Both are swarming with colon germs and redolent with putrefaction."

John Harvey Kellogg, M D, LL D.

"I am convinced that any one who eats the average amount of meat consumed in this country will improve rather than suffer by cutting it all out of his diet. Meat greatly increases intestinal putrefaction. There is no other class of food which so greatly tends to promote intestinal putrefaction and unwholesome decomposition products."

Doctor E. V. McCollum of John Hopkins University.

"Animal diet is not essential to man"

Lord Playfair, M D.

"Chemistry is no more antagonistic to vegetarianism than is biology. Flesh food is certainly not necessary to supply the nitrogenous products required for the repair of tissue. Therefore, a well selected diet from the vegetable kingdom is perfectly fitted, from a chemical point of view, for the nutrition of man. Further than this, I will add that I entirely disapprove of the modern rage for concentrated essences of flesh meat."

F. J. Sykes, M. D., B. Sc.

"Flesh foods contain substances which the body cannot use and which have to be got rid of as waste material by the liver and kidneys."

Dr. S. Henning Belfrage, The ABC of Food

"Excessive animal flesh-eating is the most common dietetic error. A great many people have the idea that meat is strengthening and they cannot do a hard day's work unless they have a large ration of butcher's meat. Actually, as I have already indicated, milks and cheese etc are adequate substitutes, and animal flesh is no more "Strengthening" than these foods. Apart from the diminishing body alkalinity, excessive meat eating tends to increase intestinal putrefaction."

(Sir William Arbuthnot Lane Bart C.B.M.S., F.R.C.S in the News Health Guide)

"This well marked relation of food to positive health and longevity is both an interesting scientific outcome of chemical research on a point on which there has been much skepticism and a result of considerable human significance in that it makes possible for a large proportion of all people that full measure

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of health, happiness and efficiency which only the most fortunate now enjoy. Perhaps it may also function as one of several factors in even more important aspects of human progress”

Dr. Henry C. Sherman in “Chemistry of Food and Nutrition.”

“It is a vulgar error to regard meat in any form as necessary to life” While this statement is amply proved by the fact that more than three fourths of human race never eat flesh, it is difficult to understand how a civilisation can call itself Christian or human or even rational while its main article of food is not only unnecessary, but one that involves so much degradation to the producer, disease to the consumer and untold suffering and cruelty to the victims.

Sir Henry Thompson, M. S., F. R. C. S.

SUFFICIENCY OF VEGETARIAN DIET

Considering on the other hand sufficiency of Vegetarian diet, we find that so far as the dietetic values are concerned vegetarian diet not only contains all the necessary elements required to maintain the bodies in perfectly healthy condition, but is superior to meat diet in many respects. The physical fitness health and stamina of the nations and communities, living on non-flesh dietary, can be attributed to the sufficiency and superiority of vegetarian diet. Yet the following testimonial and experimental evidence corroborates the same.

FLESH-EATING AN UNNECESSARY HABIT

“The International Commission of expert scientific authorities appointed by the Inter Allied Conference at Paris in 1918 to consider the food problems of the Entente Nations—consisting of Professors Gley and Langlois (France), Bolazzi and Paghami (Italy), Hulot (Belgium), Chittenden and Lusk (United States) and E. H. Starling and T. B. Wood (United Kingdom)—passed the following resolution at their meeting in Rome on April 29th, 1918.

The Commission has decided that it is not desirable to fix a minimum meat ration in view of the fact that no absolute physiological need exists for meat, since the proteins of meat can be replaced by proteins of animal origin such as those contained in milk, cheese and eggs as well as by the proteins of vegetable origin”

I advocate the simple and single natural food of original Man even for Modern Man in spite of all the long centuries of mixed and cooked dietary of mankind. I feel strongly, very strongly on this subject. And why? Firstly; because the natural uncooked food has saved my life, has rejuvenated my body and made out of an overfed old man, courting apoplexy and rushing blindly into

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a premature grave, a comparatively young, vigorous and healthy person And secondly because it has through my mediumship saved many a valuable life threatened by disease, which would have succumbed under the unnatural modern diet and orthodox treatment

O L Abramowski, M. D , Ph D

It must be honestly admitted that weight by weight vegetable substances, when they are carefully selected, possess the most striking advantages over animal food in nutritive value I should like to see the vegetarian and fruit living plan brought into general use and I believe it will be

Sir Benjamin W. Richardson, M D., F R C. S.

From "Foods of Man—Animal and Vegetable."—A comparison.

If I am asked, did these people who gave up eating meat lose tone or become weaker ? My answer would be that in the majority of cases they confidently stated that they found themselves stronger and more powerful in body, and clearer and more vigorous in mind

Josiah Oldfield, D. C L , M. R. C. S , L. R C. P.

I judge that a strict vegetarian will live ten years longer than a habitual flesh-eater, while suffering in the average less than half as much sickness as the carnivorous must. All public danger lies in a direction opposite to that of vegetarianism.

Horace Greeley,

Editor of the New York Tribune. Autobiography.

EXPERIMENTAL EVIDENCE

A series of remarkable and instructive experiments concerning diet, which were made by Professor Chittenden, Department of Agriculture, incidentally demonstrate that human beings can be better nourished and sustained in strength and health upon a fleshless diet than when flesh food forms part of their regimen

For the first time in history a fully qualified investigator was able to obtain a sufficient number of representative subjects, and to experiment upon for a sufficient length of time under scientific test conditions, to render possible, accurate and reliable conclusions.

The Professor employed six brain workers (University Professors and medical men), twenty men from the Army Hospital corps, as representatives of moderate muscle workers, and eight university athletes, men working their brains moderately and their muscles excessively The experiment lasted from October, 1903 to June 1904, and was made under rigid modern scientific methods, the men eating and working only in accordance with the directions supplied

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He proposed to demonstrate what is the smallest quantity necessary for maintenance of health and strength, of protein (which is principally obtained from meat, fish, eggs, nuts, milk and cheese) The estimate of physiologists before this experiment was about 120 grams or a little over 4 ozs. Sir Machael Foster from the English point of view estimated 130 grams as being necessary for a man doing moderate work and weighing 150 lbs.

Professor Chittenden, however, proved that no such quantities are needed that 50 grams were sufficient for twenty soldiers, and 55 grams for eight athletes, whilst he himself only needed 36 grams And with this reduction in the amount of proteid consumed, an increase in health and strength was obtained.

The significance of the fact thus demonstrated may be illustrated by the following remarkable record of results:—

The ordinary daily ration of the American soldier consists of 75 ozs of solid food, 22 ozs of which consist of butchers meat. The diet of these soldiers (and also of the athletes) was reduced to 51 ozs by eliminating practically the whole of the meat (21ozs) and a small portion of the other solids. They were kept on this diet for nine months and as a result it was found that although they were at the commencement of the experiment fully developed men apparently at the zenith of their strength, yet at the end of the nine months they were much stronger and in much better condition.

The dynamometer actually recorded the fact that they had gained about 50 per cent in strength, and their work was done with greater ease and effect, their spirits were lighter, their health was improved and not one of them cared to return to his former diet when at liberty to do so.

MEN OF CULTURE

Thus it is evident that the meat diet is unnatural, unnecessary and unwholesome. There is no reason therefore why horrible cruelties and slaughter of the dumb animals should continue for a diet that kills humanity by killing millions of dumb animals? It should be admitted that the creation of awakening of genuine humane sentiment in the hearts of the majority of the people is needed, if cruelty is to be suppressed and merciful treatment of the sub-human races made obligatory, and this can only be accomplished by humane education, the world's greatest necessity at the present time. Humane diet is so fundamentally related to such an awakening, as pre-disposing cause, that it cannot be ignored or omitted from our considerations or endeavours. For a carnivorous, world can never be a humane world The following opinions of some of the men of culture, will be read with interest.

"The land of cruelty and torture is the land of the mind of ignorance, crime and sin."

Lucille Southall,

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"Church and school did not tell me, and has never told its pupils, that all other life on earth was as precious as my own, and had an equal right to fight for its existence."

J. O. Curwood.

"If there is any one point which, in six thousand years of thinking about right and wrong, wise and good men have agreed upon, or successively by experience discovered, it is that God dislikes idle and cruel people more than any other;—that His first order is, "Work while you have light," and His second, "Be Merciful while you have mercy."

John Ruskin.

"Cruelty, in its many forms is the one detestable vice against which all the powers of good are in rebellion."

Sir Oliver Lodge.

"You have just dined, and however scrupulously the slaughter house is concealed in a graceful distance of miles, there is complicity."

Emerson.

"The greatest coward is he that treats with cruelty a helpless living thing"

Don Marquis.

"Every false word, unrighteous deed for cruelty or oppression the price has to be paid at last."

J. A. Froude.

"The Golden Rule must be applied in our relations with the animal world, just as it must be applied in our relations with our fellow men, and no one can be a Christian man or woman until this finds embodiment in his or her life."

Ralph Waldo Trine

"Perhaps the surest test of civilisation is Man's attitude towards animals. Ill-treatment of animals is not necessarily the sign of deliberate cruelty in torture; it is more often an indication of defective imagination, and ability to understand"

William Lyon Phelps

"In striving against cruelty, in pleading the cause of animals you further the education of childhood and the uplifting of our poor humanity."

Cardinal Mercier.

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The Bombay Humanitarian League is a pioneer Humanitarian Institution which has been trying to create such an awakening among all classes of people by educative propaganda, not merely based on sentiment, but amply supported by scientific facts and cultural and moral considerations. Its efforts in bringing about a reform in diet and consistent humaneness, mark almost a new era in the humanitarian movement in the East. It is necessary to carry on such efforts more vigorously so as to create due regard for life of all creatures, which can only ensure better treatment, improvement and protection of cows. So long as people follow criminal habits of diet and religious customs, there is less chance if any for bringing about real improvement in the cattle of this country. Hence the work of improvement and protection of cattle or any animal species should begin with humane education.

Much of the credit goes to the Bombay Humanitarian League and other sister institutions for bringing about the much needed reform in the humanitarian movement in India, without losing its highest ideal of *Ahimsa*, at a critical time when the "old order changeth and giveth place to new". Always standing like a veteran for complete *Ahimsa*, the League and its sister institutions have been trying to make the most of the sentiment that rules predominant and utilise it in the best economic, physical and moral interests of the Nation. While trying for reform in diet, the League very nobly serves the humanity in as much as the adoption of vegetarian diet means avoiding several dangerous diseases which owe their origin to flesh foods, and gaining health and longevity, which is perhaps the foremost desire of all creatures. Again adoption of vegetarian diet reduces the horrible slaughter of useful milch and agricultural cattle as well as other animals, that play an important part in the economy of nature, and tends to promote goodwill, peace and prosperity. The humanitarian movement has thus a great national importance apart from the spiritual one and deserves universal sympathy and support.

GOSHALAS AS CATTLE BREEDING AND DAIRY FARMS

Similar revolution is being brought about in the working of Goshalas and some of the Pinjrapoles in this country. These institutions, as is well known, are among the oldest institutions that bear testimony to the noblest Aryan creed of *Ahimsa*. They came into existence as infirmaries to provide food and shelter to the helpless dumb creatures whom their owners could not provide with life-long protection. Before foreign rule there was adequate provision everywhere for pastures, and fodder was in abundance with every cattle owner due to the perennial system of crops, everybody in the land could provide lifelong protection to his cattle which constituted his principal wealth. Hence only few animals were to be maintained on the philanthropy of the Mahajans who generally opened and maintained such institutions. But with the advent of foreign rule all means that helped the cultivator to manage independently, were exploited

perhaps as a matter of policy and today things have so changed that the maintenance of cattle, however useful, has become a problem. This state of things is mainly responsible for the destruction and deterioration of cattle and has brought unusual pressure on the Goshalas and Pinjrapoles which, as we see now, are over-crowded and unmanageable. To an off-hand visitor these institutions appear to be the threshold of death and their maintenance is supposed to be a great economic loss. This is far from truth. In the first place, if in the hospitals we see painful sights of the diseased persons, many of whom die there, we cannot condemn them as being a place for death. As a matter of fact Hospitals, Infirmaries, Shelter-homes, are all places of service of the suffering human and sub-human creatures. Their utility cannot be measured by economic loss or gain but can only be measured by the degree of humanity and sense of service underlying them. So what is to be condemned in such institutions is want of humanity and spirit of service rather than the presence of weak, old, infirm animals. Where the promoters and workers of such institutions lack in the genuine spirit of humanity, service and sacrifice, there is no wonder if the purpose of such institutions is frustrated. But that is no reason why the pious Institution of Pinjarapole or Goshala should be condemned. It is always desirable to set things in order in such cases by showing better ways of work rather than condemning the Institution. It will be gratifying to note that institutions like the Bombay Gorakshak Mandal, Bombay Pinjarapole, Bombay Gogras Bhiksha and many others have realised the present-day needs and have modernised their present methods of work which mark a new era in the history of such institutions. The Bombay Gorakshak Mandal's progress during past decade, in the matter of cattle breeding and milk supply, reflects credit on its workers, assisted as they are by the Government Live stock Department, in matters of scientific breeding. Such a change in the management of such institutions is welcome so far as their main function of sheltering, saving and serving the helpless cattle is not impaired.

It is well known that the very institution of Pinjarapole and Cow Protection Societies is based on the blessed belief that *Ahimsa* and mercy are the highest virtues. We, therefore, find that it has been made obligatory on Hindus and in fact all humanitarians, to have due regard for their fellow creatures and provide for their maintenance and protection in various ways as a matter of religious duty.

ECONOMIC USE OF GOGRAS

The sacrosanct character attributed to "Cow Species" and other animals has also a great economic bearing on the every day life of man. It is out of utilitarian considerations also that protecting, saving, maintaining or feeding animals has been made a religious obligation. How these religious obligations can be best utilised for the spiritual, economic and physical uplift of humanity is amply exemplified by institutions like the Bombay Gogras Bhiksha, Gogras Gopidan Mandal and others of its kind by carrying on the work of cow protection in the

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most useful manner. The Bombay Gogras Bhiksha, for instance, which is founded and maintained out of the proceeds of handful of corn daily set apart by orthodox Hindus in Bombay as Gogras before meals, as a part of their religious duty to the cow, whose munificence and bounties supply nourishing food to humanity, has succeeded in substituting the old method of offering cooked food as Gogras, by a more convenient and rational method of offering uncooked handful of corn to the mother Cow—a change that is now responsible for the upkeep of one of the well-managed Goshalas in India having useful cattle breeding and milk supply departments, run on scientific and economic basis along with the pious work of sheltering helpless cows.

ECONOMIC METHODS OF GOJIVDAN

As observed elsewhere in this Chapter the evils of saving cows from butchers by paying fabulous prices, which indirectly encourage slaughter, were boldly exposed by the Bombay Humanitarian League. Societies like Shri Govardhan Sanstha, Wai; and Shri Gogras Bhiksha put that reform in practice by going to cattle markets, haunted by butchers and their brokers and succeeded in introducing an economic method of saving cows from the cattle markets.

The Bombay Gogras Bhiksha organised Gojivdan work at the huge cattle market held annually at Mhasa in Thana district in winter by establishing Gogras Gojivdan Mandal to do the work. Their method of saving animals from going to butchers and the system of giving animals thus saved, for life-long protection to needy cultivators on set terms, have proved beneficial both to the cattle that unfortunately meet with premature deaths in slaughter houses, and the cultivators who have no means to carry on agricultural operations. Every year about a thousand useful cows and bullocks that are saved by the Mandal are given to cultivators for protection and humane use. Regular records, annual inspection, exhibitions, all these ensure protection for the cattle. Supply of breeding bulls and such other help encourage improvement of breed. Thus a very useful work of saving cows, their protection and improvement is being done with great economy, economic benefits of which may be summarised as under.—

(1) The Mandal offers itself as a humanitarian buyer at the cattle market exploited by butchers, and in case of extreme necessity buys cattle of those who are obliged to sell them by force of circumstances such as paying revenue cess or Sowcar's dues. The cattle are saved for further agricultural purposes and the poor cultivators under straitened circumstances get reasonable price for their surplus stock.

(2) The Mandal again lends the animals so saved to other needy cultivators, who badly need cattle for agriculture, but cannot buy them due to poverty and indebtedness. Thus the Gojivdan cattle help the needy cultivators in carrying on their agricultural operations, and are properly cared by them.

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(3) As the Gojivdan cattle are lent to cultivators on the condition of permanent protection, there is no need of spending any amount in maintaining Gojivadan cattle in Goshalas or Pinjrapoles.

(4) Any amount spent for Gojivadan work on these lines is productive in as much as cattle wealth is saved, and these prove useful in producing millions of rupees worth agricultural products

(5) The efforts of the Mandal in improving breeds of cattle saved by the Mandal by giving breeding bulls, is a further economic gain to the country. Due care is taken by the volunteers and workers of the Mandal to keep off commercialism and create due regard for animal life among cattle owners.

These and similar methods of cow protection contribute much to the economic welfare of the country and deserve encouragement.

Cattle by hundreds are disposed off to butchers every year, not only at Mhasa, but several other places in our country. Roughly speaking every Taluka or a District place has its own Cattle-Forum where originally choice cattle could be sold and secured. It aimed at serving as a Cattle Exchange of no mean order, but unfortunately, along other things the institute has lost its purpose, and been defeated. Such perversion is very detrimental to the cattle wealth of our land. Such fora serve as Penitentiaries of the cattle. Thanks to the Yeoman services of the benighted institutions like the Bombay Humanitarian League, Bombay Gogras Mandal, and several other budding and pious institutions, such a sad drainage of cattle to the slaughter houses could be stemmed rather effectively. The animals so saved are well placed and improve upon their lot.

FANATICISM ITS OWN PUNISHMENT

Fanaticism of any section is sure to react upon itself. As 'mercy is doubly blessed, it blesses him that takes, and him that gives' We can likewise say that fanaticism is doubly cursed, it curses him that bears and him that suffers. It is a double-edged sword, it wounds both. Hindus may not lose sight of this.

That H. H. the Nizam has penalised the keeping of pictures of the cow to 6 months' sentence, and Rs 500 fine, is a sheer height of silly intolerance. Such Fatwas and Firmans of Molvis and Nababs or whoever they may be, are sure to undermine their Prestige and Power and to deepen the spirit of estrangement between two mighty brothers Hindus and Mahomedans

REFORMERS BEWARE !

Before finishing this point, we must note that aggressive Hindu reformers of the *Moonje school* (also known as *Mansa party* in contrast to *Ghas party* as the abstainers are styled) are ADVOCATING the use of meat etc. Reserving

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comments on this mentality, we could see how such reforms tell on killing. Admitting that there may be some dietetic value in meat, it is useless and uneconomical and harmful to agriculture from national standpoint. We admit that some adequate food reforms are badly needed, but it must not be Non-Vegetarian foods at all. We shall reopen the discussion later on. But from religious viewpoint we have to see that '*Himsa*' or killing is minimised where it cannot totally stop. '*Ahimsa*' has come as a political weapon to us by the grace of Mahatma Gandhi; it marks the highest watermark of civilization. Why then, this petty yet primary '*Ahimsa*' be not extensively practised on bold initiation of national welfare.

It is our clear duty to stop killing ourselves and for our sake. Tolerate till Rationalism and Nationalism of protecting life prevails over the Traditionalism of Killing.

Religion, especially Ecoreligion with respect to cattle, only begins with non-killing, but does not end with it. Sadly enough one cannot gainsay the fact that the generality of Hindus treat cattle and keep them in most abominable and piteous conditions. When they do not kill them they subject them to a wretched plight. It is at once a tragedy and a travesty of Religion! That shows they follow the letter and kill the spirit and that is largely why the state of cattle is worsening day by day. Our ignorance, shortsight, superstition, narrow selfishness, inertia, and misguided charities are jointly responsible for bringing matters to such a pass. On '*Sankranti*,' *Dhan Trayodashi* and only a few days we go cow mad-vaccophyles. Do you think this transitory cow-madness-vaccophobia can save or correct the situation in any way? The answer is an emphatic no. Look at Siam. It is a cow-worshipping country and perhaps for the same reason cow has deteriorated to the lowest level of a scrub. It is a mere exhibit, and nothing more over there! Is not our land rushing to the same condition by reason of a miscarried and misconstrued religion? Let us admit this heart-rending truth that we Hindus and Mahomedans are way-laid from the path of true religion. We are only bigoted and hysterical for nothing. We have lost a true perspective because we are viewing each other's things with a squint eye. Let us unlearn this, re-educate ourselves, and sublimate our Religion to the status of Ecoreligion consistent with true National religion which alone is Yug Dharma, and which alone can be a practical religion, the Saviour of the Land and not a Sink. Otherwise in its present grotesque form it only serves as a dead millstone in the neck of BHARAT MAIYA. Let us then view the problem in this light and determine what way we can solve it. When *Dharma* degrades into *Dharmada*, it ceases to function in a healthy way. When *Goprasna*-cow problem is viewed with the latter and not with the former standpoint, it becomes a task and drudgery. The beauty of duty is lost and despair and dismay overtake us. Beware please!

CHAPTER X

ECONOMIC MAGNITUDE

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Panorama of Performance (Chart).

Economic Importance.

Cattle Statistics.

Bounties vs Charities

Imports of Lactoproducts.

Hide & Skin Industry

Manures & Fertilizers.



IN A NUTSHELL

INDIA ANNUALLY AVERAGES

Rs 6,000 Millions of Dairy Income	
Rs. 9,000 „ „ Draft & Animal Labour	
Rs. 8,000 „ „ Agr Crops etc	
<hr/>	
Rs 23,000 Millions	

Cow's problem is thus directly a problem of 15,000 millions and indirectly of 8,000 millions Indian cattle cost 10,000 millions of which 70% are wasted after unwanted scrubs, only 30% are well spent The above 7,000 millions plus 200 millions of Pinjrapole charities, require to be usefully invested rather than so awkwardly wasted as now.

QUALITY & NOT QUANTITY IS THE ORDER OF THE DAY. India has these 10,000 millions to devote after quality by revising and recorrecting her Cattle budget The prosperity of Indian Agriculture is closely linked with the IMPROVEMENT OF LIVESTOCK.

—Royal Commission of Agr. in India.



ECONOMIC MAGNITUDE

THE ECONOMIC IMPORTANCE OF CATTLE IN INDIA TO-DAY.

Rs. 1540,00,00,000/- only.

“The Animal Value of the Animal Labour & Animal Products in this country is difficult to estimate but the report after careful calculations puts this at an enormous sum of Rs. 1540 crores.”

(Report of the Imperial Council of Agricultural Research, March 31, 1932)

Quoted from FREE PRESS JOURNAL 22-2-33.

“From my experience, I would say that the average yield of Indian Cows all over the country probably does not equal 1000 lbs per period of Lactation.

Assuming that there are 30 million adult cows in India and taking the yield of 500 lbs. as the Increased Yield, —at 1 Anna per lb, it means an increase of 185 crores of Rupees.”

Wm. Smith (Journal of Dairying and Dairy Farming in India, Vol. I, Pt. 2-1914)

“According to the latest figures available, there are in British India some 45,793,625 adult bullocks and 37,885,686 adult cows Assuming that 90% of the above bullocks are actually required for the cultivation of the soil and that the average life of a working bullock is 9 Yrs., British India requires to breed 4,579,362, bullocks per annum to carry on the work of cultivation. To do this only some 1,400,000 cows are necessary, so that in addition to this number, India carries some 24 Million cows not required for bullock breeding purposes If this figure be accepted, the most pressing and immediate problem in connection with Indian Cattle Breeding seems to be the Economical use of her SURPLUS COWS.

It is probably correct that some 50% of the people of India are meat eaters in some form or another but it is certain that a very large proportion of this fifty per cent do not eat Beef, and are unlikely to become Beef-Eaters. The Parsis are meat eaters but most of them will not eat beef. In the great majority of the Muhomedan villages of Northern India, oxen are not killed and eaten with the exception of one or two animals slaughtered for sacrificial purposes once a year at the ‘ ID ’ Festival

... The utilisation of cows as work cattle in India is practically unknown

. Indian cows on the average give such lamentably poor yields of milk at the present moment, yet the quantity of milk need not worry any one The improvement in this direction will be slow, the aim of all breeders should be to make it sure.

PROBLEM AND PLIGHT OF THE INDIAN SCRUBS

There are over 26 crores of domesticated horned cattle in India. This works out to 65 per cent of population. Hence in densely populated areas there is a very keen economic competition between the human beings and the cattle for the produce of the soil. My observation leads me to believe that over 90% of these cattle are an economic loss to the country, that is, the cow does not pay her board in the milk and offspring which she gives, and the ox is of so little value that it does not pay to raise him.

Over 90% of the cows of India give less than 600 lbs of milk a year. In most parts of India a three year old ox can be bought for 20 Dollars. The milk and food he ate in his first year was worth more than this.

I estimate that the loss per animal per year for 225,000,000 heads is ten Dollars each, or a total aggregate loss per year of \$ 2,250,000,000 (Rs 7,03,12,50,000).

(*Sam Higginbottom*, Gospel and the Plough)

CATTLE STATISTICS OF INDIA

According to the statistics of 1930, the following were the number of cattle in India :—

British India	.	.	.	..	.	154,629,097
Indian India	..	..		..	...	48,207,139
						Total 197,836,236

Whereas the whole world possessed as many as 375,555,236 heads of cattle, which shows that India though a 5th part of the world has 53% of the world cattle. But the quality is poor. The productive power of the cattle on one hand and the maintaining power of the land on the other, are so low that the cattle are doomed to death and deterioration if wiser counsel does not prevail

These 18 crores are valued at 900 crores by Mr Smith, the Agr Minister in his evidence before the National Agr. Inquiry Committee

“The pressure on land is so heavy, that our land has to bear the burden of 61 cattle along with every 100 human souls Or in other words, every 100 acres of our land has to maintain 67 heads of cattle, along with men between 70 to 80 in number. Again for every 100 acres of arable land there are about 92 acres of unutilised land out of which a portion may be brought under plough if the laws be made lenient.”

(*Mr ZAL R. Kothavala*)

ECONOMIC MAGNITUDE

The unculturable waste may be secured for the cattle if persistent efforts be made in acquiring the land from the Government. The tractor plough may break such expanses of land and raise new pasture lands for the cattle.

The Forest Department, and the encroaching Plough of ever increasing population and the subnormal and unproductive cattle compel the present pasture land to vacate in favour of mankind.

India's total expenses of cattle may be more than 100 crores of Rupees in money and in kind it may be more than 8 times the cash expenses : India's Cattle Bill is 1,000 crores of Rupees.

India's Philanthropy is so myopic and traditional in nature that hardly 5 % of the money utilised by them may be said to be spent usefully and progressively.

Mr. Zal R. Kothavala in his evidence before the International Association, has stated that it is estimated that about 20 crores of Rupees are being spent year after year by India in her Pinjrapoles.

If only a tenth of the portion is progressively ear-marked for the betterment of cattle, by opening a productive and Self-Helping section of cattle, and starting Dairy Farms, Tanneries or subsidizing such institutions, cheapening fodder for the cattle, by opening Grass Depots and supplying cheaper and free Milk to the babies of the land, castrating stray bulls and taking every conceivable care to build Purer, Stronger and Newer Cattle, then and then alone they may hope of saving their pet cattle, otherwise they might be incurring sin by utterly failing in their duty towards the fitter animals. The indiscreet Charities are unproductively wasted after scrubs resulting in double *Himsa* : one by failing in bettering the luck of the scrubs and the other by not helping and subsidising the fitter ones.

BOUNTIES AND NOT CHARITIES SHALL ONLY SAVE THE CATTLE FROM THE PRESENT NATIONAL CRISIS

Save the cattle in the National, Rational and Scientific Manner.

Pure Milk is a Luxury of the Rich in India, whereas it ought to be common food of the Poor.

(Pirille . Dairy History of the World)

India including the native states has more cattle than any other country of the world ; and while a great service is rendered by these animals in Food and Labour, their latent possibilities would certainly prevent Famine in that country, *if they were fed and properly housed and milked*.

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An old report of the Director General of Commercial Intelligence in 1911 said that a reasonable estimate of the number of people using ghee as food would include about a quarter of the population, and that the average consumption of those using ghee was estimated at about 8 lbs per annum (2,67,000 tons) 72,00,00,000 lbs of Butter i.e. only 2.2 lbs Butter consumption per annum per capita. In the case of army the daily ration was 2 oz, aggregating 45 lbs Yearly (54 lbs. of Butter.)

If one fourth population consumed only one half as much ration as the army, the total consumption must exceed 7,50,000 tons. Bombay consumes only 12 17 lbs per capita India's Lacto Problem is a tremendous problem. It is 185 Crores of Rupees It can't ignore it without a vital loss to it.

INDIA IMPORTS ONE CRORE RUPEES WORTH OF LACTOSE

In 1931, in spite of 20 % Import Duty on Dairy Products, India imported as follows :—

	Rs.
Milkfood for Infants and Invalids	25,75,681
Butter	4,89,944
Cheese	6,91,570
Ghee	1,28,936
Condensed Milk and Cream	60,55,519

Total. Rs. 99,41,650

The above figures, I think, indicate the tremendous opportunities for the development of commercial dairying in India.

—Allahabad Farmer, No 2, March, 1933.

Besides this, the following figures will serve as Eye-Opener to us ; they clearly indicate what a tremendous opportunity lies ahead of India when it could fruitfully take up the task of developing the potentialities of its animal wealth.

HIDE AND SKIN INDUSTRY IN INDIA

In point of importance this entire Hide and Skin Industry is one of the most important phases of India's Economic Life. Its Annual Gross Value runs into as many as 40 to 50 crores of Rupees.

—Hides Cess Enquiry Committee appointed by the Government of India, 23th September 1929.

DRAINAGE OF THE DEAD



ANIMAL PRODUCTS FROM INDIA

Rs. 13,00,00,000 (Hides and Skins)

India is largely a lacto-vegetarian country. The slaughter that takes place is mainly for the Hide and Skin Industries 13 crores of Rupees worth of hides and skin are exported out of India. India stands third in their market. Hides worth 13 crores of Rupees indicate that cattle worth 33 crores of Rupees are slaughtered, although their performance value may be nearly 100 crores, calculating their dairy, manurial and agricultural products.

It is on one hand computed that the total cost of scrubs should be in the neighbourhood of 66 crores. The difference between the worth and value of these slaughtered animals can safely compensate the unproductive expense of the scrub-boarding. (If the slaughtered ones be made use of in a better way.)

1924-25	Tanned Hides	677 Lacs of Rs.	...	27,38,000 Maunds.
"	Untanned Skins	700 "	..	26,71,000 "
				"India in 1924-25."

The prices are also greatly inflated. Rs. 73 1/2 per cwt. of Hides. It is also computed that 45 lacs of heads of cattle are beheaded annually for Beltong Dried meat. In 1920, 4 lacs mds. of dried meat was exported.

As for bones it is recorded that in 1912-13, about 25 lacs Rs. worth of bones weighing 14,000 Khandis were exported.

—Sir Atul Chatterji, Industries in U. P.

Paper-knives, spoons, combs, balances, shoe-horns, etc. are manufactured out of horns; hoofs and hair and all the dead relics are utilised.

—Alfa Latifi, Industrial Punjab.

MANURES & FERTILIZERS AN ANIMAL GIVES MANURE WORTH Rs. 80 OF PLANT FOOD PER YEAR

But unfortunately we never feed them well, and secure and avail of it, on the contrary we burn or waste the rich Farm Yard Manure, impoverishing Mother Earth and consequently starving ourselves and cattle

Hoofs and horns yield glue, buttons and handles Rich fertilizers are obtained from their phosphates ; fat (tallow) could be tapped for soap and candle, and glycerine, gelatin, glue, rennin, pepsin and the products of their ductless glands are all useful to the science of Organotherapy in curing important ailments Myriads of such articles are manufactured from Animal relics

Animal charcoal is also a useful stuff for bleaching and deodorizing purposes. Liquid Fuel-bone-oil and Black Varnish are derived therefrom

(For details please refer to the Chart of Panorama Of Performance)

There may be 1500 Pinjrapoles in India according to a liberal calculation, but we are confronted with a ghastly fact that there are more than a myriad Tanneries in our Fateful Land

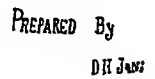
In 1921, there were 19 bone crushing Mills in the Land, with a total business of 10,897 Khandis of disintegrated and 595 of whole bones and 1,39,653 Khandis of bonemeal totalling 2,49,214 Khandis valued at 92 laes of Rupees of bones were sold While in 1912-13, 3,08,619 Khandis were exported.

The export of Animal relics is an unrelinquishable loss to the land, like minerals, oil seeds, manures etc—Uncalculable loss indeed !

Let us now close this sad story of exploitation, and Non-Utilization of National Sources of Animal Products both—Live and Dead ones (For detailed study please refer to the chart of the Sapping of India)

Quite naturally and logically, India being predominantly an Agricultural country, it ought to manufacture its own stuffs out of animal yields, but its industries being crushed down, paradoxically it has to export, import, and re-import its own animal products and manufactures. The subjoined figures would bear out the fact :—

BREEDS OF BOM. PRECY.



ECONOMIC MAGNITUDE

In 1930-31, India imported as follows :—

Commodity	Great Britain	Foreign Countries	Duty
Machine Straps (Leather Made)	Rs. 2,665 (Thousands)	3,98	25 %
Boots and Shoes	. „ 1,670	2,140	„
Leather	. „ 117	3,094	„
Leather Ware	„ 4,200	6,835	„
Fat and Stearin	„ 633	3,103	„
Fish (tinned)	„ 362	2,566	„
Pork	. „ 1,445	1,614	„
Biscuits	. „ 4,727	5,498	„
Milk	„ 2,797	8,834	„
Milk Products	„ 3,320	3,668	„
Cheese	„ 242	1,112	„
Butter	„ 122	406	„

From Trade returns for 1929-30 and 1930-31

and *Ankh Ughado*—a Gujarati Pamphlet by Ramji Hansaraj.

—a Pamphlet of the Bombay Shroff Association.

THE PRINCIPAL BREEDS OF INDIAN COWS

No	Breed	Habitat.	Purpose.
1	Sindhi	Sind	Dual
2	Malvi	C. India	Draft
3	Gir	Kathiawar	Dairy
4	Kankrej	Gujarat	Draft in Mam
5	Kistna Valley	S M Country	Draft
6	Nellore (Angole)	Madras	Dairy
7	Kaillan	C P.	Draft
8	Deccan	Deccan	Draft
9	Montgomery	Punjab	Dairy
10	Sahiwal	Punjab	Dairy
11	Hissar	Hansi Hissar & Rohtak	Draft
12	Tharparker	S Bombay	
13	Nagore	Rajputana	Draft
14	Koshi	U.P. Muttra	Dairy
15	Koeri	U P	Draft
16	Anant Mahal	Mysore	Dual
17	Dhani	Punjab (Raval Pindi, and Pindhari.)	Dual



CHAPTER XI

THE HITCHES AND DITCHES

The Vicious Cycle

In Their Own Words.



THE VICIOUS CYCLE OF INDIAN POVERTY

More the population, More the Pressure on Land,
Scantier the pastures, Feebler the Cattle,
Poorer the agriculture, Weaker the men,
Lower the vitality, Lower the efficiency,
And poorer & poorer the Country
Poverty cycle spins on and spins on, and spins on,
So viciously, so vexatiously so vehemently

It is problematic whether the cycle begins with
or ends with man or the cow But it is only sure
as death that the cycle gathers momentum with the
passage of time How & where to break it is a problem
of problems for India

Full-Ration-Swaraj is the H C F of Poorna Swaraj,
the Irreducible minimum that India demands.



THE HITCHES AND DITCHES

BRIGHTEN UP THE COUNTRY-SIDE

How to provide the amenities of modern life for the rural dwellers who constitute 90 per cent of the population of India is a very serious problem confronting those engaged in nation-building in this vast sub-continent of nearly 700,000 villages. It is highly necessary that life in these villages should be made more pleasant and attractive so that the educated and moneyed class might stay there and develop the villages. Recently a movement was started in England for the brightening up of the country-side and the movement is gaining ground every day. His Royal Highness the then Prince of Wales lately blessed the movement by undertaking a tour in the villages of Nottinghamshire. Addressing the villagers, His Royal Highness said "Agriculture and the social aspects of life in the country are parts of a single whole and cannot be divorced. But agricultural conditions depress the standards of village life and bad social conditions react inevitably on agricultural efficiency." "Those activities which bring zest and keenness into the life of the villagers," proceeded His Royal Highness, "have a direct influence on agricultural prosperity and for that reason alone are well worth encouragement." Referring to the necessity for creating an interest amongst the rural population His Royal Highness said, "the Scots showed long ago that the man was not the worse shepherd because he studied philosophy and if sailors are helped to go about their work by singing shanties, a ploughman will drive a furrow none the less straight if in the evening at a dramatic society he takes a part in one of Shakespeare's plays." His Royal Highness said that the chief enemy to progress is apathy. "Apathy is worse than depression because depression can be dispelled by action. If people who deplore what is wrong in village life, would face up to it and get busy they would soon find that with apathy out of the way they would cease to be depressed." Let us hope that our rural workers will find guidance and encouragement in these words.

The future development of Agriculture can be made most rapid and most sure, not more by giving to the farmer new facts, than by making him able to observe, interpret and correlate the facts which each and every year's planting, hoeing and harvesting must inevitably bring under his own eyes. —*King*.

The crying need of the humanity is not for better morals, cheaper bread, temperance, liberty, culture, redemption of fallen sisters and erring brothers, nor the grace, love, fellowship of the trinity but simply for enough money. And the evil to be attacked is not sin, suffering, greed, priestcraft, kingcraft, demogogy, monopoly, ignorance, drink, war, pestilence, nor any other of the scapegoats which reformers sacrifice but simply Poverty. —*Bernard Shaw*.

Money is the counter that enables life to be distributed socially, it is life as truly as sovereigns and bank notes are money. —*Ibid*.

The excessive costliness of the foreign agency is not however its only evil. There is a moral evil which, if any thing is even greater, a kind of dwarfing or stunting of the Indian race is going under the present system, we must live all the days of our life in an atmosphere of inferiority and the tallest of us must bend in order that the agencies of the existing system may be satisfied.

IN THEIR OWN WORDS

The fodder question is taking a serious turn, practically everywhere in India. The Scantier the fodder the weaker the stock. No one can doubt that if matter does not change for good, in very near future the Agriculture would immediately suffer.

—*Sir Charles Elliot.*

The religious scruple with which the ancient Hindus maintained and preserved their cattle shows their deep insight into real national well-being.

—*Sir Baden Powell.*

India is losing ground as a cattle country.

—*Lord Curzon's Despatch of 1903.*

What country in the world has ever flourished which has neglected its cattle? We boast ourselves as the "Trustees of India" but what have we done to preserve the cattle-strength of India? Absolutely nothing. I am ashamed to confess that we have rather helped its Extinction. I can dream of a cattle without a nation, but I cannot imagine of a nation without a cattle.

—*Letters of Sir Wilham Wedderburn.*

Weaker the cattle scantier the population, feeble the Nation.

Dr. Harold Mann.

Every Minute a COW is exported out of India.

—*Blue Book 1921.*

Every minute five cows are Slaughtered in India.

It is not alone in regard to the human subject that malnutrition exerts such a harmful effect. Man's domestic animals suffer no less than man himself the effect of deficiency of phosphorus in the soil, and therefore in vegetation, on the health of cattle may be mentioned. Such deficiencies exist in large degree throughout India. Millions of stock in India exist in a state of semi-starvation as draught animals. They are consequently insufficient and the females as producers of milk products are more insufficient still. Human and animal insufficiency is reflected in the soil, in its imperfect cultivation, inadequate manuring

THE HITCHES AND DITCHES

and in crops scanty as to quantity, and deficient as to quality Too few animals are kept by the cultivator as the scanty vegetation cannot support them, so there is return to the land too little of that organic matter in the form of farm yard Manure, on which the continued fertility of the soil is so dependent.

—*Lieutenant R. Mac Carrison*

Health is purchasable, Education is purchasable, and Medical Aid is purchasable but where is the Purchasing Capacity of the Indian—the annas per capita income?

—*Dr. Manley Page*

If Briton has to leave India as suddenly as Rome had to leave Britain then England shall leave behind a Country Minus Education Minus Sanitation and Minus Money.

—*Sir Daniel Hamilton.*

It is not only Death rate is increased by deficient food, but the physique of the living generation is deteriorated by it.

Millions of peasants in India are struggling to live on half an acre. Their existence is a constant struggle with starvation ending too often in defeat. Their difficulty is not to live Human Lives, —lives upto the level of their poor standard of comfort—but to live at all, and not die. We may well say that in India, except in the irrigated tracts, Famine is Chronic-endemic.

Letter of Surgeon-General H. W. Bellow, Punjab.

There are still leaves on the trees and women are not yet prostitutes, therefore there is no famine in this part of the country.

—*Mr. Jackson, I. C. S. (1907)*

One third population of India is insufficiently fed; four crores of people lie down on one meal. Ten crores of people are beyond any medical assistance.

—*Azariah (1911)*

Our assessment and the Rigidity of Payment, therefore have undoubtedly tended to impoverish the people, and a system of Revenue Collection thoroughly sound in theory and meeting the requirements of unassailable economic doctrine, has in practice become a Grievous Method of Oppression, and the subject of Formidable Attack.

—*Ramsay Macdonald*

Why is India more liable to devastation by famine than are other countries?

ROMANCE OF THE COW

Not because rain fails and moisture is denied ; always in the worst of years there is water enough poured from the Skies on Indian soil, to germinate and ripen the grain, but because India is steadily growing poorer.

—*W. S. Lely (India And Its Problems)*

Forget not that this crushing poverty takes even a Severer Toll on Indian Cattle by taking 5 lives and 1 exportation every minute.

The country is disastrously overstocked with cattle which are unable to perform even the inefficient services which the agricultural system imposes on them. By careful selection and proper feeding certain of the indigenous breeds in the herds at Department Farms have been raised to a level of milk production not far short of the crossbred animal, and this is the better policy for India. (N A.C. VII-4)

B. A Keen from the Records of the Rothamsted Staff Harpenden
Feb-33-(A Year in India.)

For days and days one goes through the land and sees nothing but thin bodies Toiling, Toiling, Toiling, Trudging, Trudging, Trudging. India is a home of the poverty—stricken and this was borne in upon me all the more that its poverty was embodied in forms of the most perfect human grace. The poverty of India is not an opinion, it is a fact.

J R. Macdonald. (The Awakening Of India)

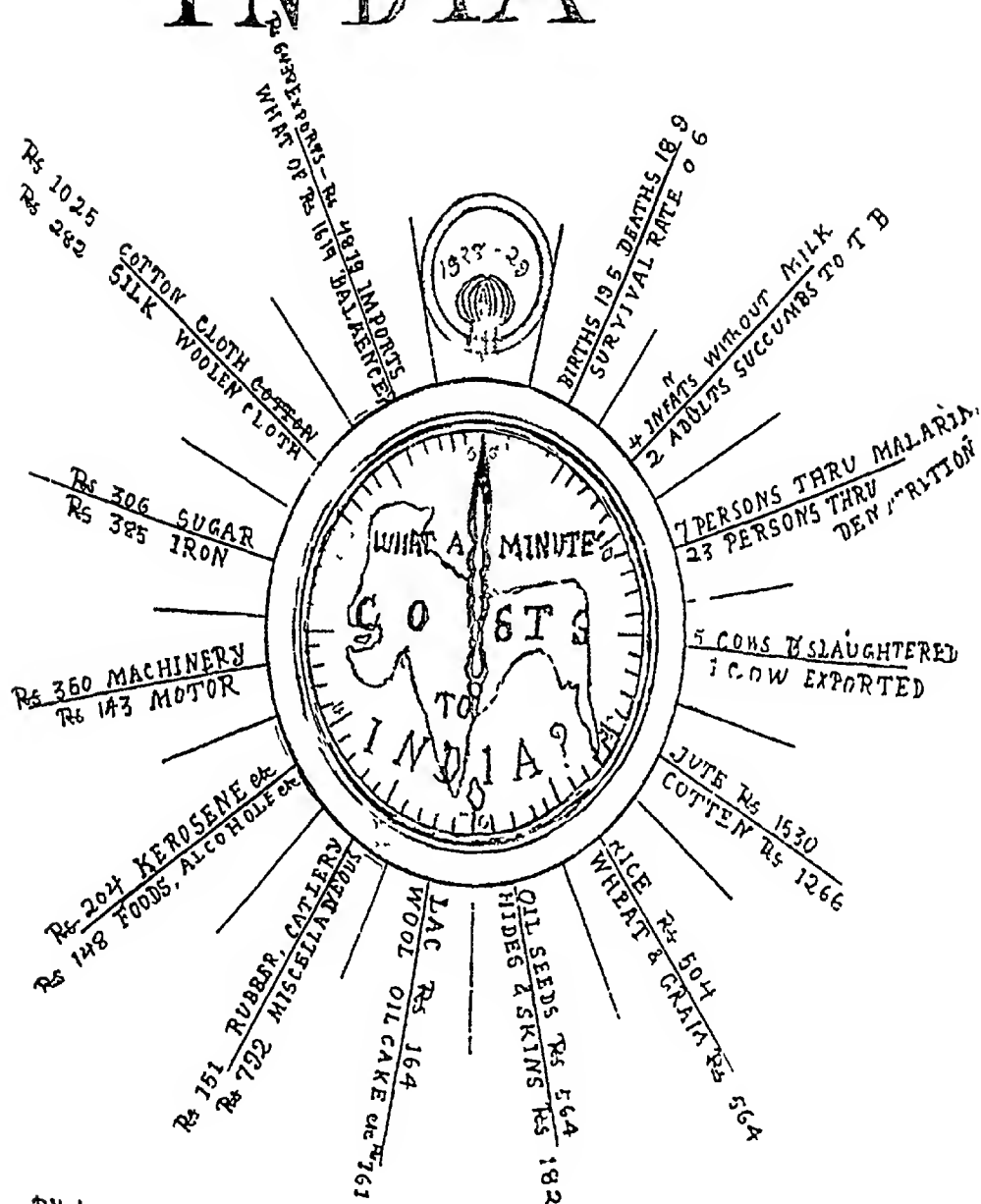
I have just returned from a study of the Indian Problems on the spot and can urge earnestly before your readers the intense pathos of seeing village after village, village and village with all the men still more the women and the children, showing those pitiful signs of daily struggle to live with only half enough to live upon.

I have seen the poverty of the English villages and the desolation of the London slums (and a doctor in the slum sees more of the real poverty of the homes than a parson does), but I have seen nothing that haunts me more than the spectacle of these brave honest hard working, economical people toiling on week after week, with only a piece of coarse Bajri or Juwari bread and a handful of pickles to keep it down and a drink of butter milk twice a day. There's no declared famine in India at the present time (1902) but I have visited scores of villages and have entered many a house and have found the corn bin empty or nearly empty.

What does this mean? It means that their scanty harvest has already been sold to pay the tax and that in another two months they will have nothing at all left

Wm Digby's The Ruining of India. p. 159.

THE DEATH WHEEL OF INDIA



By -

D.H. JAN1.

WHAT'S INDIA THEN?

STARVATION: -

DEATH, DISEASE, DRUDGERY DACOITY

JUTE COTTON TEXTILES REEXPORTS & MICELLAVEONE
IN LAKHS OF Rs

MHAF IS INDIA TO-DAY'S FOREIGN INVESTMENT +
AS 200 PLWY+32569 COL AS 187 MATHEMATICAL
JUTE JUTE + ACE-TER + + 3MAD REDDITS 2.1

25% INTOGATE

JUTE
COTTON

FOOD	PRODUCTS
------	----------

INDIA'S DRAIN. OF

FOOD STUFFS
SPECIALS

RICE 2647
 WHEAT 2088
 OILSEEDS 2925
 TEA 2440

~~PRODUCTS~~
~~50617~~

DESIGNED BY
D H JANI

WHAT IS INDIA TO-DAY?

[illegible]

Q3380191

~~17600 EXPORTED~~

cleaning up milk and honey

India was such in mass, money, necessity and in
India was such in mass, money, necessity and in

~~India was gay and free, was not
1-1-68 and gold under foreigners hold~~

GREAT
 BRITAIN

15400
BRITAINS VACATED
CLIPPER

THE AMERICAN
SIXTY-THIRD

THE HITCHES AND DITCHES

Hyndman opines :- Even as we look on, India is becoming feebler and feebler, the very life blood of the great multitude under our rule, is slowly, yet ever faster, ebbing away.

ROBBER BAND

The ploughman ploughs, the sower sows,
The reaper reaps the ear,
The woodman to the forest goes,
Before the day grows clear ;
But of our toil no fruit we see,
The harvests not for you and me ;
A robber band has seized the land,
And we are exiles here.

Edward Carpenter.

INDIAN PEASANT

His speech is mortgaged bedding,
On his KINE he borrows yet,
At his heart is his daughter's wedding,
In his eye foreknowledge of debt
He eats and hath indigestion,
He toils and he may not stop,
His life is a long drawn question
Between a crop and a crop.

Rudyard Kipling.

"It simply means that Indians have not yet come to regard as possible luxuries many things which America's poorest regard as absolute necessities. No one may understand India who ignores this degrading, debasing poverty which is one inseparable link in the Vicious Circle of Ignorance, Superstition, Oppression, Ill-health, Infant Mortality, Lack of Sanitation and the continued persistence of such epidemic diseases as cholera, dysentery, plague, enteric, malaria, hookworm, small-pox and other preventable ills."

"It is a poverty which robs manhood, womanhood and childhood of all that is best and most worthwhile on them. India's poverty is a menace to the rest of the world."

"The causes of India's poverty :- 1 Caste, 2 Too many cattle that are economic loss to the country (about 7000 million rupees annually), 3 the great army of able bodied men over 5 million of them who toil not, neither do they spin, the religious mendicants or faqirs. But the greatest of these is caste."

Dr Sam Higgibottom in the Gospel and the Plough

I believe, it may be stated absolutely, that the whole of Peasant Indebtedness originally came from the necessity of thus imposed need of finding coin to pay the Land Tax.

This is the last worst evil which English Administration has brought upon the Indian Peasantry. We have given the ryot security from death by violence, but we have probably increased his DANGER OF DEATH BY STARVATION.

W Blunt (India Under Ryots)

ROMANCE OF THE COW

Certain efforts however inadequate, are being made to save India from the clutches of the moneylender by the creation of Co-operative Banks, but the prevention lies in lifting the TAX BURDEN which is bearing him down. Five men cannot pay a direct tax in money amounting to 40% of gross produce and the interest on old debts at 25% upon 3 acres of uncropped soil without danger in a bad year of catastrophe.

Prof. Radhakamal Mukherji.

*

*

*

We have given the people a Rly. System which removes the SURPLUS CROPS ! but we have not given them a BANKING SYSTEM to bring back the price ; the world takes the Surplus Crops, the Sowkar and the Trader take the MONEY and the DEVIL TAKES THE PEOPLE, HER PRESENT AND FUTURE.

Daniel Hamilton.

CHAPTER XII

A BIOLOGICAL WONDERMENT

Genesis of Status Grandis.

Marvellous Performance

More Efficient than a Machine.

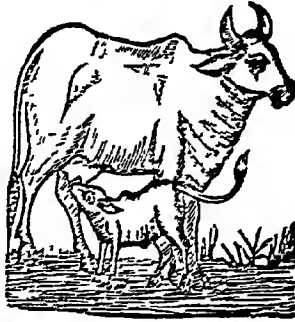
Biological Value of the Cow

Bionomics of a Typical Cow.

Cow vs. Graduate



A BIOLOGICAL WONDERMENT



Truly THE COW is the
MOTHER OF PROSPERITY.

Where the cow is kept and cared for, Civilization advances, land grows richer, homes grow better, debts grow fewer.

Hayne

Cow, the Dumb Mother of Mankind.

Wordsworth.

The Cow—My Dumb Mother.

Leo Tolstoi.

Cow, the foster Mother of Mankind

Milo Hastings.

Cow—the Mother of the Moon.

(Babylonian Mythology)

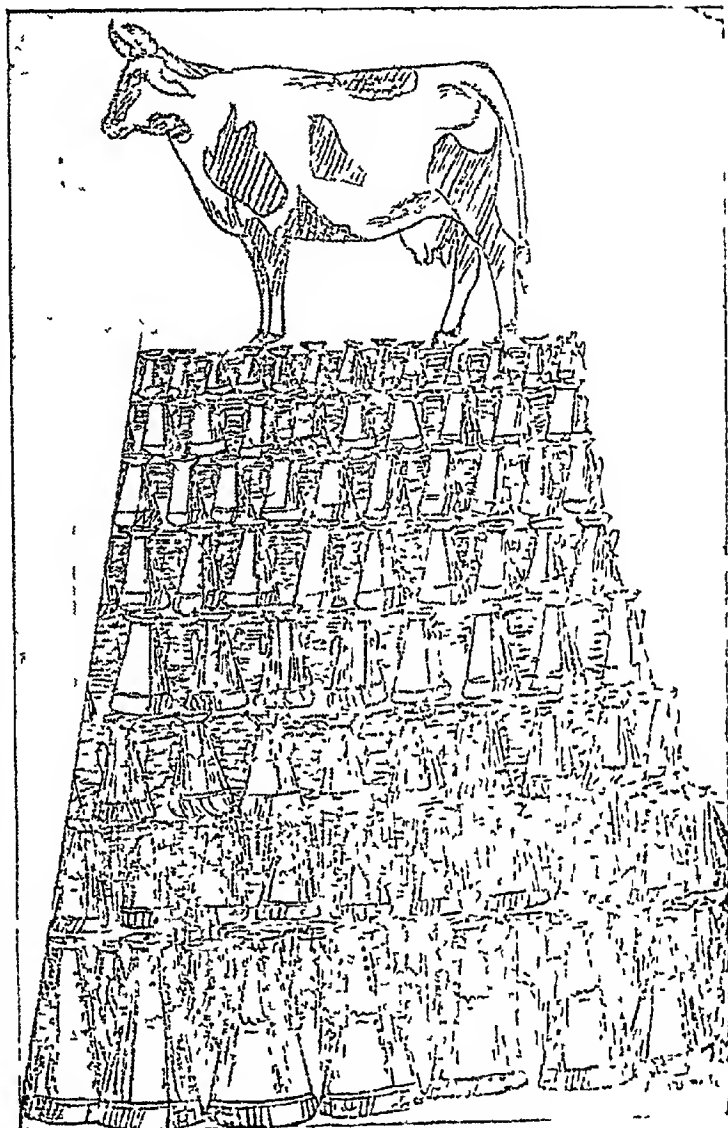
Mother of *Rudras*, daughter of the *Vasus*, Sister of *Aditya*, Fount of nectar.

(Vedas)

A BIOLOGICAL WONDERMENT

GENESIS OF THE STATUS GRANDIS

In the foregoing chapters, we have traced how the status grandis was assigned to the cow by the Ancient Aryan religion, its offshoots and allies. But for this mother, perhaps the humanity at large might not be able to march through civilization at such a tremendous speed. Compare the backwardness of savages. These our contemporary ancestors groan under the century-old conditions but for the cow. In the light of recent findings of the archeologists and antiquarians



at Harappa, Mohenjo Daro and other places, we are strengthened in our belief that Aryan Civilization had reached such watermarks as have not yet or ever been achieved by any of the civilizations whether extinct or extant.

Even the modern civilization of the world which is at its highest zenith in the West and especially in America, owes very much to the cow. But for the cow, their materialistic grandeur should be half shorn off, in spite of the vast paraphernalia of their colossal means, money, munition and machinery.

ROMANCE OF THE COW

Personal efficiency of a nation, known as vital efficiency owes largely to its dietary. Not a small amount of Dairy products along with meat and fruits enter into their menu. Among meat products beef and bacon are their principal favourites. The former they could not have, but for the cow, and for the latter swine would not thrive without the cow. It is on the dairy farm that the swine farming and poultry could develop more economically and profitably as side industries.

It is the cow that builds its soil with its excreta and relies by yielding fertilizers and thus indirectly builds the vegetation and through vegetation mankind. It also directly builds the nation by yielding sumptuous dishes of luscious lacto-products such as milk, cream, cheese, butter and their by-products. No science, no nation, no materialism has yet been able to devise any suitable substitutes for these dairy dainties, without serious detriment to national health and efficiency.

To a student of comparative dairying, it would be evident that the West does not avail of the cow in a humdrum and slovenly way like India, but it avails of its 'utilities' to fullest amount. On no account, they would allow the animal to deteriorate to a submarginal level. Their national policy is what is worth doing, is worth doing well. They never believe in half way house policies and slipshod methods. In one respect they differ from us, namely that, they do not use, the ox for the draft purpose, but they use it for slaughter.

We know cattle have two purposes to serve, Draft and Dish. We have to utilize them for both, while the West has only one purpose to serve yet they bestow upon them manifold attention and care. They develop them to an astounding degree. Even though they do not idolize and deify the cow like us idolatrous Hindus, yet they respect and recognise her as the most serviceable and useful animal and treat it as such with science and conscience, with the difference that, the animal there is happy till it lives, while here the animal is happy when it only dies. Here it is a living death to the animal.

Cattle in general and cow in particular humanises mankind. Savages live almost in a quasibrutal condition. With the aid and company of the cattle and especially the cow, mankind has risen to a higher rung on the ladder of life. He passes on from nomadic and pastoral, to the agricultural and from agricultural to the industrial life. Arnshby observes that no nation can ever become a conquering nation, without the ample use of Dairy products; look into the history of any people and country and it would become evident.

Cow humanises mankind. Cow in a sense, serves as a barometer of a country's cultural and economic level. It is a sure indicator of mankind's moral and material progress. Refer to that splendid volume of Pirtle's Dairying History of the World, and the above truth shall emanate in case of any country whatsoever.

A BIOLOGICAL WONDERMENT

Generally, the civilization of a country is gauged by the use of soap, or sulphuric acid by the chemical industrialist, it could be most assuredly measured by the magnitude and quality of its trees and cattle. Cow is thus a barometer—an indicator of the vital, economic and cultural condition of a country.

Through the curious march of several geological ages, mammoths, dinosaurs, long lizards and several other freaks of nature have been fossilised and are no more on the face of this world. But the cow *Bos Indicus* bids well to survive many a geologic cataclysm to come, only because mankind is vitally linked with it. She is sure to make ecological adaptations along with man and outlive many geological ages.

Cow and man form a link, both at a time to swim or sink. The symbiotic relations existent between them are so sound and secure that no vagaries of materialism can disjoint them, they are so closely dovetailed together. They have biologically reciprocated with each other, that one varies directly with the other. They rise or fall together.

MARVELLOUS PERFORMANCE OF COW

For every 100 lbs of digestible nutrients consumed, cow yields about 139 lbs of Milk containing 18 lbs of Milk Solids, practically all digestible. She easily leads all farm animals in her power to convert the crops of the field into human food. The pig produces about 25 lbs. of dress carcass. Allowing for water, bone and gristle there remains over 17 lbs of edible dry meat. The steer and sheep yield less than 10 lbs. of dressed carcass, nearly half of which is water. Deducting this and gristle, there remains only from 2.6 to 3.2 lbs of water-free-edible meat.

Jordan,—The Feeding of Animals

In an ingenious experiment at the N. Y. (Geneva) Station by Jordan and Jenter, N. Y. (Geneva) Bul-132, a cow for over 3 months was fed on hay, cornmeal and oats, from which fat had been extracted by naphtha, as is done in one method of extracting the oil from flax seed, yet she yielded 65 lbs of fat in milk remaining quite lean and hearty only turning carbohydrates etc. into fat.

SUPPLIES ON, THOUGH STARVED

The dumb mother responds marvellously to better feeds and kinder treatment etc. This is a positive test of her nobility; but she can afford a negative proof testifying her motherly sentiment as can be seen from the following experiment of Eckles—

He fed a mature Jersey cow a liberal ration while dry, she calved in more than moderate flesh. Her ration was then adjusted to supply only nutrients sufficient to support the body, leaving nothing for producing milk. She was compelled either to cease producing milk or to make it from the reserve of her body. This continued for 30 days. At the end of this time she was producing

ROMANCE OF THE COW

only one lb of milk per day less than in the beginning but was so weak she could hardly get up without assistance During this time she lost 115 lbs in her weight, and produced over 90 lbs. of solids in the milk from her own body!

We can now understand how our Indian cow has been bleeding for us. We want her as the proverbial *Brahmin's* cow who produces but costs nothing.

Moreover a cow out of 100 parts of her feeds returns 80 parts in manure. If the cattle are on farm, the farms lose only a fraction of fertility via dairy products as compared to crops which cannot also yield as much manurial value as the cow. Either way the cow is superior to crops Cow should therefore complement if not compete with crops On Ohio St 4 cows on 20% and 8 on 4½% digestible nutrients did not fare well, yet the chemical composition of milk remained remarkably constant.

A trial at the New York (Cornell) Station evinced that the cows taken to the station from the owners responded splendidly to liberal feeding for 2 years. They gave 42% more milk and 51% more fat than when with the farmer.

RESPONSE TO GROOMING

In some trials grooming increases the flow of milk 4% to 8% though grooming may not increase the yield of milk, it does improve its quality by lessening the number of bacteria contained and may improve the health of the animals.

RESPONSE TO KINDLINESS

When the cow is freed of the ticks and other pests sucking her blood, she responds to it by increasing her milk flow upto 33%.

RESPONSE TO MUSIC

She responds to the tunes of music in the tune of 16% of milk increment!

AMENABLE TO SOUND WAVES

Milk sterilized with sound waves (Dr. Leslie Chambers and Prof. Newton Games of Texas) kill of 80% of all bacteria and complete in some spores not yet.

(Sc. Am.)

RESPONSE TO GREENS

Change in diet or the treatment of milking animals affects the concentration of Vitamin A. Green clover, grass or green kale given to cows on Basal rations of concentrates, oatstraw and roots produced a considerable increase from two to sevenfold in Vitamin A contents of milk while it had no effect on Vitamin D.

Exposing cows to direct sunlight, on the other hand, increased Vitamin D contents without changing Vitamin A.

A BIOLOGICAL WONDERMENT

THE ANIMAL AS MACHINE

Numerous experiments have shown that animals at moderate work can convert into external work from 29 to 37% of the total energy expended. On the average, about one-third of the energy used by men or animals in muscular exertion is recovered as useful work. The rest takes the form of heat within the body, and is lost so far as the production of work is concerned. These figures do not take into account the energy lost in the excreta, that expended for digestion and assimilation, or that used in maintaining the body when at rest. Thus as a mere machine, the animals compare favourably with the best modern tractors. The efficiency of an animal is especially striking when it is borne in mind that the tractor is supplied with pure fuel.

A Dairy cow producing 1 lb. of butter fat per day uses about 47% of her food for the support of her body. 21% in the work of converting food nutrients into milk, and actually yields in her milk about 29% of the digestible nutrients in her feed. This shows her to be more efficient machine than either the horse or the steam engine.

(Haecker. Minn. Bul. 110)

REQUIREMENTS FOR BEEF AND MILK PRODUCTION.

	Beef. 100 lbs		Pork 115 lbs		Milk. 500 lbs.	
	C	O	M	M	O	N
Pasture	.					
Gram (lbs.)	..	663		504		136
Protein Concentrates		19		16		
Alfalfa and clover hay	.	113		1		166
Other hay	.	116				
Stover and Straw	.	525		..		30
Silage	.	1787				518
Skim milk	..			32		
Hours of man labour	.	4		2		12

DeKalf Co., Ill. 1921, Iowa and Illinois 1921 and Wisconsin 1920 experiments respectively

Compare how cheap, how insidious, how healthful are the Lacto products in contrast with the dead relics! Lacto products are incomparably valuable. They are manufactured in the body laboratory of the mother cow, and yet so economically! Study the following figures for that. Mark how the Dairy products rob the least fertility and breed the most!

ROMANCE OF THE COW

1 Ton of Alfalfa absorbs from land	Plantfood \$ 9.5	and can yield	Manurial value 9.5	
„ Clover „ „ „ „	9.07	„ „ „ „ „	9.07	
„ Corn „ „ „ „	6.75	„ „ „ „ „	3.78	
„ Oats „ „ „ „	7.43	„ „ „ „ „	3.86	
„ Wheat „ „ „ „	7.91	„ „ „ „ „	2.63	
„ Milk „ „ „ „	2.09	„ „ „ „ „	0.88	
„ Butter „ „ „ „	0.50	„ „ „ „ „		
„ Live cattle (Beef) „ „	11.78	„ „ „ „ „	1.18—	Armsby.

BIOLOGICAL VALUE OF THE COW

Now let us assess the biological value of the cow as an economic animal. Every day the newspapers publish news about the new inventions and innovations of science. With a mixed feeling of joy and wonder we read, hear, and sometimes even see the marvels of modern age such as Aeroplane, Radio, Television, Talkie, Robot and hundred other astounding items. The synthetic chemistry has given us artificial silk, indigo, colours, scents, essences and thousand other substances. This age may be easily characterised as an age of synthetic science, but synthetic food is not a practical proposition. 'A tin cow' is an absurdity. They may make a milking machine but they may never create a milkgiving machine—that is a mechanical cow. Science has its limitations after all.

The East has developed philosophy about cow—vaccasophy (as Theosophy or Anthroposophy) by weaving cow in the fabric of religion, while the West has developed vaconomy the science of the cow. By dint of science they have been able to develop cattle to a most astounding pitch. The records that animals have made by their performances baffle one's imagination. Such a fabulous development they could bring about through close and studied application of science.

The Prospect of U.S.A.—The world record cow has yielded over 37387.4 lbs. of milk, 1200 lbs butter fat in a year¹. (*vide Plate*.) Another record cow of Canada has yielded over 1800 lbs. of butter fat in a year perhaps more than what lacs of our Indian cows yield in lactation. The world record hen's yearly output of eggs is 354², the record sheep has yielded about 35 lbs of wool, and a marino goat bred in America has yielded over 1900 lbs of milk and about 110 lbs of butter.³ Here there is no occasion to compare the figures and condition in India, but the chief idea is to show what awful biological potentialities these creatures possess in them. The business of science and aim of religion is to convert these potentialities into realities. By steady progress they could do it. Refer to the Dairying History of the World by Pirtle and it would appear how from degradation and low level they have gradually been able to raise their animals to this pitch of efficiency. In point of performance

¹ Feeds and Feeding (Henry Morrison) Abed Ed P. 252.

² Hoards Dairymen.

³ Dairying History of the world—Pirtle.

A BIOLOGICAL WONDERMENT

animals are wonderfully fine and responsive. But for the present let us restrict our discussion to the cow alone. The West has recognised her as the Foster mother of mankind. Ralph A. Hayne in his beautiful brochure titled 'The Cow—the mother of prosperity' writes:—

"THE COW: One of the greatest blessings to the human race.

No nation or people has become highly civilized without her.

She produces the best human food on earth.

*She makes this health-building, strength-giving food from grass
and coarse plants.*

*She provides not only food for her young and her keeper's family,
but a surplus, besides to sell.*

*Without her, agriculture is not permanent or prosperous, people
are not healthy or happy.*

*Where the cow is kept and cared for, civilization advances, land
grows richer, homes grow better, debts grow fewer.*

Truly, the Cow is the Mother of Prosperity.

Wordsworth has accosted her as the Dumb mother of mankind.

Our estimation and appreciation about the cow is merely out of religious reverence, yet that almost exactly tallies with the materialistic and utilitarian view of the occident. Their science confirms our opinion. Their observation during experimental procedure of cow-keeping 'signs, seals and sanctions' our view based on traditions and hearsays.

In the Vedic Ages, cow was tested and experimented upon in these several points and then it was on her own merits that she was given that unique status. It was by worth and not by birth that the cow was respected then. The *Shatoudana* cows could easily beat the record cows of the West of to-day. By worship they made her more useful while by worship we made her more useless to-day. The difference is that we are blind in worship and worship the species that is birth alone and not the speciality, that is, worth or merits. To value only the worth is real worship (worth-ship—worship) according to Ruskin! (Re. Sesame and Lilies).

Cow was the national wealth then, as it is to-day in the West and hence duly worshipped. But unfortunately it has almost sunk to a submarginal level and has ceased to be wealth but has proved to be 'illth' to use Ruskin's phraseology.

Let us then study the observations of the West.

THE BIONOMICS OF A TYPICAL INDIAN COW

The accompanying chart will visualise the performance of Jill—a half-bred Indian cow at Bangalore. Although her record is not as great as that of the cows in the West, nor is it greater than the best purebreds as at Pusa and such places, yet by all means it appears as three or four times as good at performance as other purebreds of ordinary calibre. However we look out for a day when our ordinary cows shall attain that degree of excellence as the purebred choice cattle on the Government Experiment Stations on our own land. The following elaborations are equally applicable to the purebreds of our land even at present.

JILL:



She during her lifespan of $19\frac{1}{2}$ years, yielded 154,779 lbs of milk, 10 heifers and 7 male calves. She was a cross between Ayrshire and Hariana (Punjab). The annual production for 16 years averaged 9544 lbs. She was wet for 295 days every year that is 83% days. Her highest record in a single lactation was 12,002 lbs, averaging, 41 lbs. per diem (From the Obituary Note by the Writer in the Nav Jivan, dated 27-10-29)

In order to enable ourselves to completely understand the biological importance, let us indulge into some mathematical calculations, and try to portray before our mind's

eye the significance of an animal. Vide elsewhere a comparison of a graduate with such an animal. The pertinent Plates visualises her performance in pictogram forms. What she yielded during her life time could be shown by the following equations:-

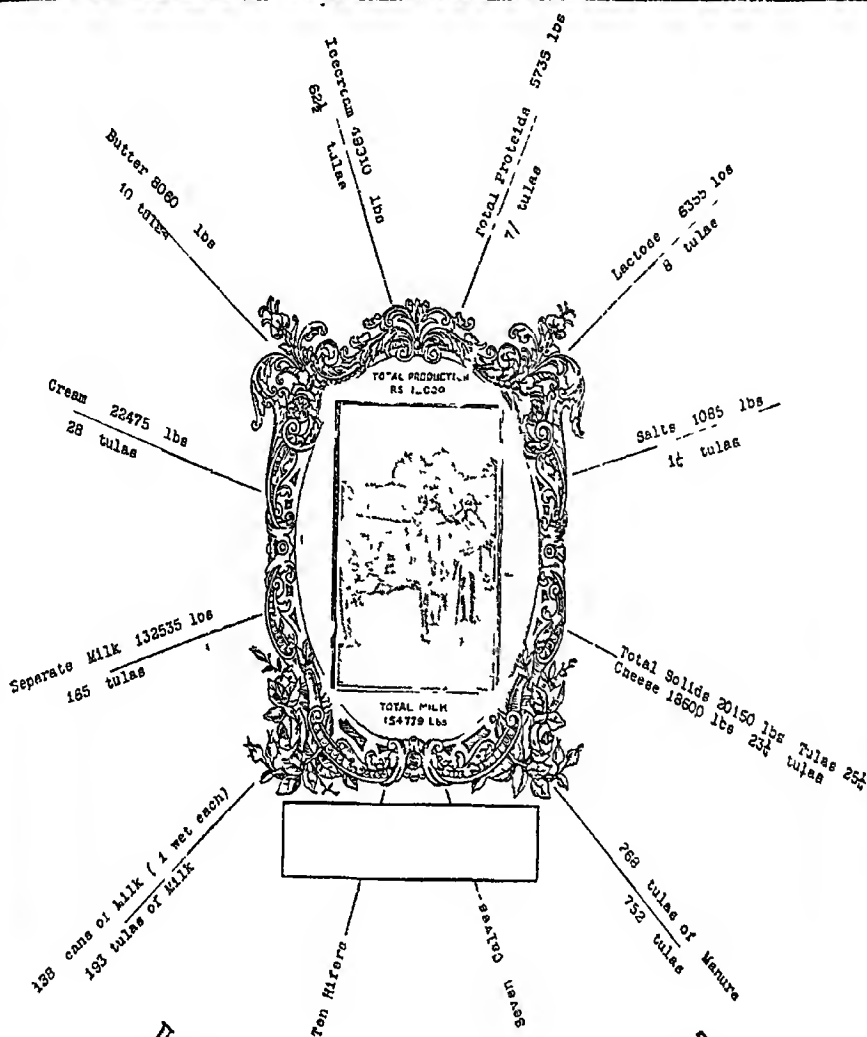
Total Nutrients digested 111,500 lbs
Total milk yield 155,779 lbs (39% more)
103 times her weight of Milk (Tulas)
Cream 22,475 (28 Tulas)
Separate Milk 132,525 lbs (28 Tulas)
Butter 8060 lbs (165 Tulas)
Albumin 1240 lbs (10 Tulas)
Casein 4495 lbs (14 Tulas)

Total Proteids 5735 lbs (7 Tulas)
Lactose 6355 lbs (8 Tulas)
Salts 1085 lbs (14 Tulas)
Cheese 18,600 lbs (23 Tulas)
Icecream 49,910 lbs (62 Tulas)
Fat 6079 lbs (8 Tulas)
Total Solids in Milk 20,150 lbs (25 Tulas)

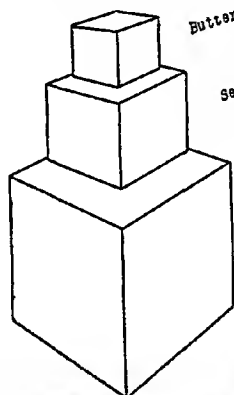
What a fine marvel a cow is, could be seen from the above bionomical results

THE NOTABLE PRODUCER - MOTHER GILL.

(Bangalore Dairy Farm)

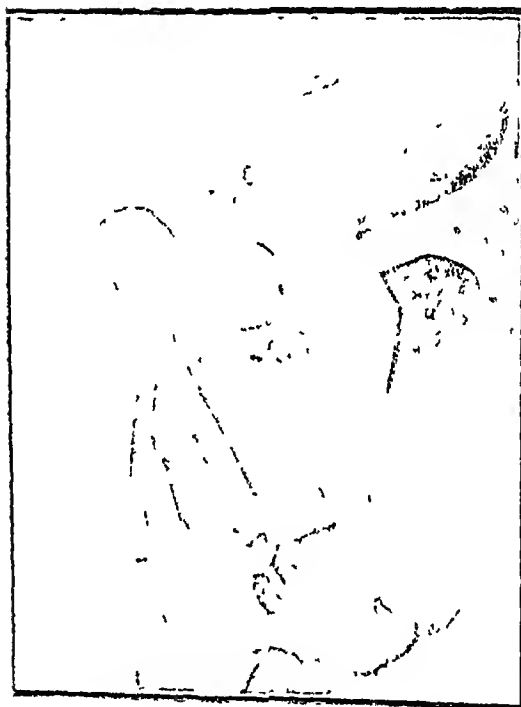


HOW FINE SHE IS!



FORFORD & CO
D. H. JAMES

FULLY DEVELOPED COW



ECONOMICS OF JILL

At only a nominal rate of one anna per pound (which for Bangalore is too low) Milk fetched Rs. 9736.

Milk	Rs. 9736	Manure	Rs. 1365
Calves	Rs. 2700	Approximate Total	Rs. 12,000

AS MANURE FACTORY

Manure 601,692 lbs-752 Tulas-268 tons	Phosphorus 1443 lbs. ($1\frac{3}{4}$ Tulas)
Dry and Solid Material 114,465 lbs. (150 $\frac{1}{2}$ Tulas)	Potassium 900 lbs. ($4\frac{7}{8}$ Tulas)
Nitrogen 3432 lbs. ($4\frac{3}{4}$ Tulas)	Calcium Carbonate 105,692 lbs. (132 Tulas)

JILL'S MILK TOWER

The total milk will fill 1382 cans each with a capacity of 112 lbs (1 cwt.) and measure 4146 ft if piled one over the other.

This Milk Pillar we shall call Jill's Milk-Tower.

Jill's Tower would be 186' higher than five Woolworth Buildings one over the other (Woolworth Bldg. is 793')

(2) Jill's Can column would outreach 4 Eiffel Towers one over the other by 285' requiring 2 Kutab Minars to be hoisted (Eiffel 894' and Kutab 150')

(3) Forest Father of California was the Tallest Tree as tall as 435'. Her Milk-column was 5 $\frac{1}{2}$ times as tall as the Sylvan Father.

(4) Pyramid of Egypt is 481'. Jill's Memorial will be 4 Pyramids and 2 Kutabs High

(5) It will rise to 27th Kutab.

(6) It will outreach 276th story of an Imaginary Skyscraper by 6'.

(7) It will easily rival the Panchagani Hills, in altitude.

(8) It equals 19 Chand Minars at Daultabad (210').

(9) The whole milklot 2417 c ft—if milk froze it would be 2638 c ft. The Milk Tree with 5 8' dia or 18 2' circe i.e. 3 men's fathoms in girth will be full hundred ft. in height !

(10) A pipe line with a 2 sq. in. bore would run about 33 miles with milk.

(11) Milk Solids in 180 barrels each one cwt. capacity.

(12) It will fill up a well 10 ft dia and 30' depth.

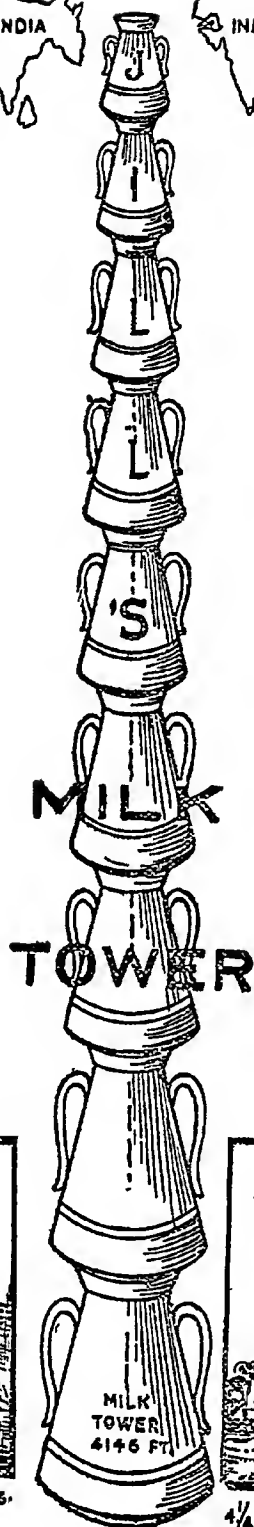
(13) It will fill up a fountain 5' high and 12 $\frac{1}{2}$ ' in Radius.

(14) It will fill up a reservoir 20' x 20' x 6'.

(15) It will fill up a Tank 75' circumference and 5' ht. (18 Men's Grasp).

Comapre how tremendous would be the dimensions of the World record cows. These figures and calculations are given here simply to serve as an Eye-opener to the Sceptical But cows can beat the graduates and even double graduates in point of their earning capacity, if not their learning capacity.

—Cow, the Paropkar Murti in Nav Jivan.



435 FT.
5 1/2 FOREST FATHER



5 WOOL WORTH BLDG.
793 FT.



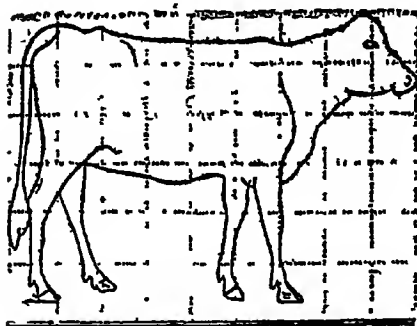
4 1/4 EIFFEL TOWER 894 FT.



4 1/2 PYRAMIDS 481 FT.

MILK TOWER

COW vs. GRADUATE



The cow's milk in cities do not sell cheaper than one anna a lb, in some of them it sells at 4 to 6 annas. The average price may be safely set at 2 as. a lb. However in the following comparison we have assessed only at an anna a lb. rate in a city like Bangalore. There are several pure swadeshi cows having highest annual record of 7000 lbs. So such cows are not rarities, they may form a generality among herds built with conscience (and Con-science) in near future.

Cow
Rs. 600.

Annual income
vs.

Graduate
Rs 500
(Average is Rs 300)

Cost

So little! Very frugal, only fodder and some concentrates and what more?

So much! Very expensive creature having to spend lots on fees, (college fees, doctor's fees, cinemas etc.) on dress, cosmetics fineries, and what not!

Profit

Good profit. Income exceeding expenditure happy and content.

Par or loss. Some times incurring debts, expenses, outgrowing income, miserable and uncontented

The economic position of the record cows compare well even with that of Professors and treble graduates who serve or do not; but the former serve the humanity. According to Prof. K. T. Shah a graduate's income averages Rs. 300 as quoted by Sir P. C. Ray.

CHAPTER XIII

MILK AESTHETICS & ANALYSES

Marvels of Milk

Contents of Milk

Milk Values

Ambrosia on Earth.

Its Mineral Treasures

Cow's Milk vs Buffalo's

Gospel of Milk



MILK AESTHETICS & ANALYSES

। अन्नं हि पुरुषः ।

As the Ration, so the Nation

Pure milk is the luxury of the Rich,
whereas it ought to be the common
food of the poor.

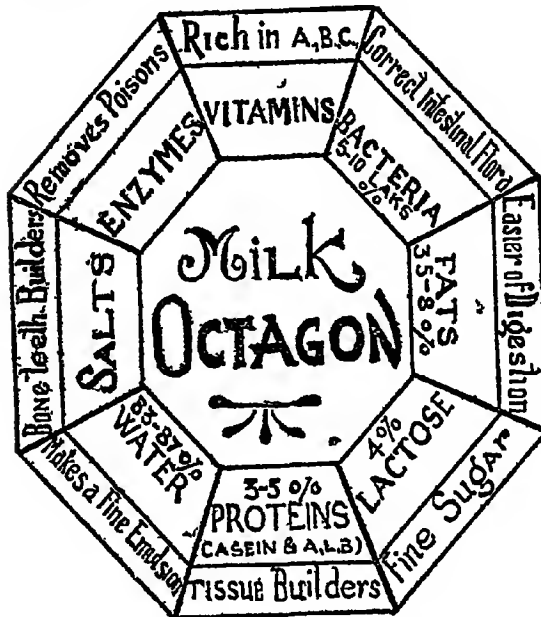
Back into the night of history, when the
orphan child walked and cried from
hunger, a Cow, outside was tied to
stake waiting to be milked

—Pirtle.



MILK AESTHETICS & ANALYSES

MARVELS OF MILK AS FOOD



Bacteria corrects Intestinal Flora.

Enzymes remove Poisons of the System

Salts build Bone, Teeth and Stamina.

Very rich source of Vitamin A. B C (Builders)

Perfect proteins build Tissues, and repair Wear and Tear.

Supreme B Fat richest in vitamin A gives Heat & Energy.

Lactose Very suitable sugar (Heat & Energy)

AMBROSIA OF MOTHER COW.

(1) Cheap.

(2) Building.

(3) Corrective.

(4) Digestible.

(5) Nutritious

(6) Soothing.

(7) Suitable

Explore the Mystery of Milk
It is at once an Aesthetic Food.
It is quite a balanced Food.
It is an economic Tonic.

FOR LONGEVITY, VITALITY & RESISTANCE
TAKE A QUART OF MILK.

ROMANCE OF THE COW

Forget Not that Ration Maketh a Nation.
As the Ration, So the Nation.
Full-Ration Swaraj is The H. C. F. of Purna Swaraj.
We rise or fall with the cow.

CONTENTS OF MILK

Milk contains Perfect Protein,
So it can repair and build the Tissue so well.
Milk contains Rich Salts in Rich amount,
So it can build good bones and teeth.
(Only it lacks in Iron, so add greens).
Milk contains water in a suitable amount,
So it makes a good Diluent.
(Milk is more solid than cucumber etc.)
Milk contains VITAMINS—A, B and C.
So it can utilise Salts, Proteins, and Water in building the new tissue and
repairing the broken ones.
Milk contains Beautiful ENZYMES,
So it can depurate poisons (Toxins and Ptomaines)
(It can cure even Leprosy and other nasty diseases of the worst type.)
Milk contains Alkaline Principles,
So it can remove Hyper Acidity.
(Hence a fine corrective against acidosis etc.)
Milk contains Benigned Bacteria,
So it can improve Intestinal Flora.
(5 to 10 lakhs c.c.—one lakh in a drop !)
Milk contains Buterin and twelve other fats,
So it is easier of Digestion, luscious in taste and matchless in flavour.
Milk contains Lactose—animal sugar,
So it does not ferment and cause troubles.

CHEESE IS SUPERIOR TO BUTTER- - - It Builds Body not butter.
CHEESE IS A PREDIGESTED FOOD - - - Most Luscious and Dainty.
Cream - - - Cheese - - - Kumiss - - - Sanatogen - - - Casein Foods - - - -

MILK VALUES

FOOD-VALUE OF MILK

1 Palatable.	5 No Preparation.
2 Digestible.	6 No Waste.
3 Well-Balanced Food for Infants and Invalids.	7 Rich in Vitamins.
4 Inexpensive.	8 Rich in Minerals.
	9 Food of many Uses.
Food value per lb. of Milk is 325 calories.	Ratio to Wheat in Production 43%.
Milk per Acre 4000 lbs.	Nutritive Ratio 1: 4 5
Calories per Acre yielded by Milk 18,00,000.	Nutritive Ratio of Skim Milk 1: 1.5.
	Calorific-Value of Skim Milk 250.

MILK'S ROLL

The Medical Research Council of London experimented on milk vs. no milk.
height and weight increments

61 boys on Basic diet :	1 84"	8.85 lbs.
41 boys on 1 pint milk :	2 68"	6.98 lbs.

In a year there were 42% and 81% increments in height and weight respectively owing to milk.

QUALITATIVE VALUE OF MILK

Milk of Indian cows and goats are richer in fat contents than those of the Western animals. This perhaps may be due to the difference in total yields. Milk rich in fat contents is correspondingly richer in other solids also.

The following experiment shall demonstrate the difference in values :—

	Batch A.	Batch B.
B. fat contents	5.5%	3.7%
Increments in weights in lbs.	6.98	8 85
Increments in heights in inches.	2.68"	1 84" (Dr. Corry Mann)

MILK VS. NO MILK

There is a world of difference in effects between milk and no milk The Danish people enjoy proverbial ripe old age in very large numbers and centenarians and post-centenarians abound in large numbers over there than in other places. This is because milk or milk products enter their dietary in some form or the other. India enjoyed unprecedented longevity in days of yore when it was flowing with milk and Sourmilk if not honey.

It has wonderful effects on all. The following experiment on pigs shall testify to it 30 pigs were given half a pint of milk each day, other 37 were under control. During 6 trials the results were : 1 28, 1 60, 1 28, 1.76, 1.12 and 1.64 lbs more in weight per every gallon of milk fed !

—Blissete and Golding

AMBROSIA ON EARTH

Milk itself is a wonderful fluid—it is so to say an AMBROSIA of MOTHER COW. The sweet nectar-like elixir cannot be too much praised Throughout this Treatise there are scattered lavish praises of Milk, so as not to need any detailed dilatation on the subject We shall however quote the following equations of the Food-Value of Milk in terms of other foods. All these figures are quoted simply to show how great a Marvel of Biology the Mother COW is.

FOOD-VALUES OF MILK PRODUCTS

One Gallon of Cow's Milk contains $\frac{1}{4}$ oz. Lime.

One Gallon of Cow's Milk contains $\frac{1}{3}$ oz of Phosphoric Acid.

MIRACLE OF MILK



COD FISH Lbs 2.



9 Oz. OF BREAD.



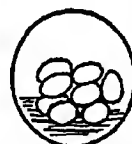
BEAF Lb $\frac{3}{4}$.



3 Lbs POTATO,



FOWL Lbs 2.



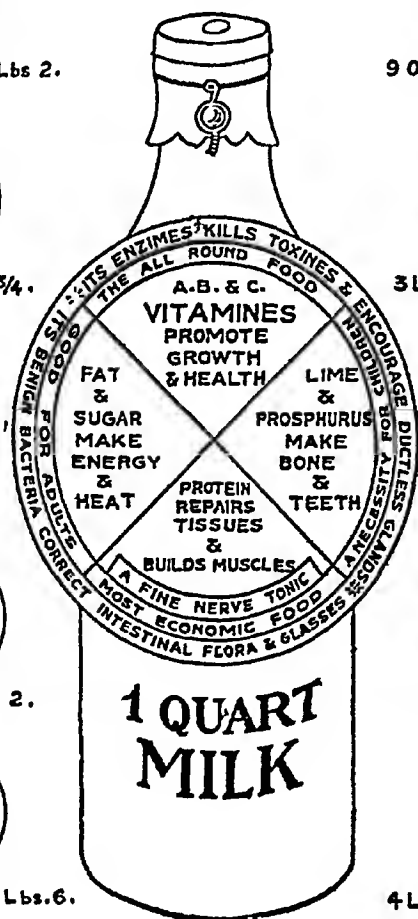
9 EGGS.



BRINGAL Lbs. 6.



4 Lbs. OF ONION.



A quart of milk, contains as much as 30 eggs, $8\frac{1}{4}$ lbs beans, 110 loaves of white bread, or 165 steaks.

Milk contains more lime than even limewater.

One Quart of Cow's Milk in Caloric Value (Heat and Energy) equals —

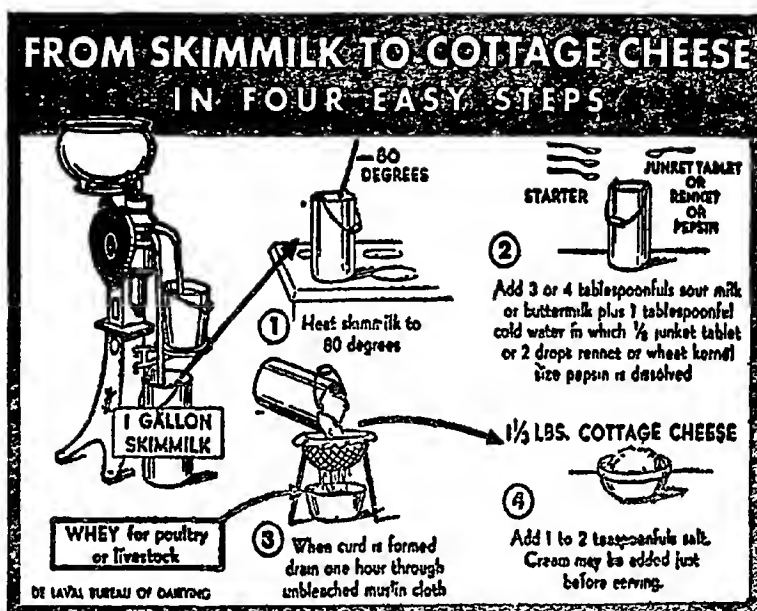
$\frac{3}{4}$ lb. Beef.
2 lbs. of Chicken.
9 Eggs (1 lb).
2 lbs. of Cod Fish.
9 oz. of Bread.
8 Potatoes.
11 oz. of Steak.
4 lbs. of Onion.
6 lbs. of Brinjals.

(Prof Roseuau
of Harward
University)

SKIM MILK

A pint of Skim Milk is as much as body-building material than whole milk as the amount of cream or butter fat contained in a pint of whole milk. It is a very cheap source of nutrition which India should avail of without fail.

CHEESE



Building Value (Protein Value) of a Pound of CHEDDAR CHEESE equals to :—

- 1 57 $\frac{1}{2}$ lbs. of Sirloin Steak.
- 1 35 $\frac{1}{2}$ lbs. of Round Steak
- 1 89 lbs. of Fowl
- 1 75 lbs. of Smoked Ham.
- 1 81 $\frac{1}{2}$ lbs. of Fresh Ham

As a source of Energy (Calorific Value), it is half as valuable as Pound for Pound.

90% of its Protein (Casein) is digested Without the fear of exaggeration or refutation, we could safely say that it is an unique Dairy Product capable of easy and suitable digestion and assimilation It is superior to Butter etc , and therefore it deserves to USURP the place of Butter and Ghee which are only Fire Foods (giving only heat and energy), but as Building Foods they contribute not an iota towards repair or growth of tissue and cell

ROMANCE OF THE COW

LET CHEESE USURP THE PLACE OF BUTTER AND GHEE.

Even cottage cheese or pot cheese can have no substitute in ghee or butter. It is pre-digested dainty of no mean value. But we have to develop it as yet.

BUTTER

Energy Value of a pound of Butter is nine times greater than a pound of potatoes. Think of the economy of the dairy products.

No Expensive Waste—No Gristle—No Seeds or Skins.

ICE CREAM

A quart of good fresh Ice Cream has the full food value of one and a half pound of Round Steak or four lbs. of potatoes or eighteen eggs, or a whole gallon of OYSTERS.

COMPOSITION OF MILK PRODUCTS

	Water.	Prot.	Fat.	Lactose	Ash.	
Evaporated whole milk	73.63	6.71	8.22	10.13	1.55	
Powdered „	2.00	26.91	28.65	36.50	5.94	
Sweetened condensed milk	27.03	7.85	8.99	12.65	1.76	{ Sucrose 41.65
Malted milk	4.20	14.16	6.54	{ 0.16 fiere	3.41	{ N. F. Ex- tract. 71.51
Cream	87.30	3.55	3.62	4.82	0.71	
Milk light cream	72.46	2.95	20.00	4.00	0.59	
Heavy „	63.41	2.58	30.00	3.50	0.52	
Whipping „	54.35	2.21	40.00	3.00	0.44	
Powdered cream sample 1.	0.80	19.19	50.40	25.45	4.16	
Powdered cream sample 2.	0.66	13.42	65.15	17.86	2.91	
Powdered cream sample 3.	0.56	11.12	71.15	14.74	2.43	
Slime separator	70.00	20.25	1.00		3.00	{ 2-8 Org M. Dnt. Lactose, Bact, Leucocytes enzymatic substances
Skim milk	90.35	3.72	0.15	4.98	0.80	
Evaporated milk	71.05	11.16	0.45	14.94	2.40	
Sweetened condensed milk	28.60	8.29	0.67	12.36	1.86	{ Sucrose 48.22
Dry milk	3.89	35.42	1.74	48.74	8.08	
Butter	13.90		82.41		2.51	{ Curds. 1.18

MILK ÆSTHETICS & ANALYSES

BUTTER OIL—CENTRIFUGED MELTED BUTTER

	Water	Prot.	Fat	Lactose	Ash	Lactic Ash.
B. milk sour cream	91.61	3.80	0.50	3.40	0.65	0.50
„ sweet cream	90.98	3.51	0.35	4.42	0.72	0.01
Condensed „	60.64	12.15	1.2	16.20	2.5-3.5	2.3
Dry „	1.93	38.74	5.87	39.91	7.68	5.87
Cheese Sausis	30.34	26.80	30.34	—	3.5	{ Salt. 1-1.4
„ Cheddar	37.33	23.39	33.31	—	5.89	
„ Roquefort	38.69	21.39	32.51	—	6.14	4.14
„ Cambert	47.91	19.66	27.33	—	—	—
Soft	71.4-79.9	12.7-21.1	0.4-1.9	—	0.8-2.5	—
Whey } Prot. }	3.28	38.02	—	43.02	16.38	—
Powdered }						

AVERAGE COMP. OF MILK OF VARIOUS ANIMALS

Species.	Water.	Casem.	Alb.	Fat.	Lactose.	Ash.
¹ Human	87.41	0.91	1.23	3.76	6.29	0.31
Cow (Western)	87.27	2.95	0.52	3.66	4.91	0.91
Buffalo (Western)	82.14	4.29	0.49	7.44	4.81	0.83
Goat	84.14	3.04	0.99	6.00	5.02	0.81
Sheep	81.90	4.57	1.26	6.52	4.82	0.93
Camel	87.04	3.49	0.40	2.76	5.57	0.74
Horse	90.68	1.27	0.75	1.17	5.77	0.36
Ass	89.88	0.73	1.31	1.50	6.09	0.49
Reindeer	68.2	8.4	2.0	17.1	2.08	1.5
² Indian Cow (Average of 50)	{ 87.1 to 85.5	3.4	0.6	3.85	{ 4.5 to 5.2	0.65
Indian buffalo (Average of 63)	82-77.5	5.2	0.8	6.5-8.75	5	.7-.95

Species.	No. of days in which weight of the new born is doubled.	Milk of the species contains%			
		Protein.	Ash.	Cao.	P ₂ O ₅
Man	180	1.6	0.25	0.049	0.056
Horse	60	2.0	0.38	0.114	0.121
Cow	47	3.5	0.72	0.161	0.189
Goat	22	4.3	0.81	0.191	0.219
Sheep	15	6.5	0.89	0.277	0.269
Pig	14	6.7	1.03	0.395	0.357
Dog	9	7.1	1.01	0.338	0.364

1 Fundamental of Dairy Sc 2 Prof. Dr. Godbole and Sadgopal.

ROMANCE OF THE COW

COMPOSITION OF ASH AND MILK PRODUCTS

						Separator
		Cream.	S. milk.	Milk.	But. milk	Slime
Potash	7.23%	28.381	31.634	25.02	24.53	3.155
Soda	5.72	8.679	60.265	10.01	11.54	1.325
Lime	34.85	23.411	21.913	20.01	19.73	45.025
Magnesia	2.06	3.340	3.115	2.42	3.56	3.361
Iron oxide	52	2.915	921	13	0.47	1.846
Phosphoric acid	41.43	21.735	19.478	24.29	29.89	43.976
Sulphuric Acid	16	—	1.000	3.84	—	1.691
Chlorine	11.25	14.895	15.071	14.28	13.27	—
	103.22%					

(Fundamentals of Dairy Science)

SALTS

Milk minerals in Cow's milk are 75%. Of them potash is from 22.5 to 26.9, Soda 10.3 to 11.9, Lime 10.7 to 23.6, Magnesia 1.8 to 3.2, Iron oxide 0.2, Sand 3.7 to 4.3, Phosphorus 22.4 to 26.5, Chlorine 13.5 to 16.8 and Citric acid .1 to .25 per cent of the total salts

FATS

The salts are in form of Calcium Citrate, Common salt, potassium acid phosphate and traces of tricalcium phosphate

(Van Slyke—Modern Methods of testing Milk and Milk products).

Cow's milk contains better phosphorus than meat (Forbes and Keith).

Cow's milk contains 0.6 (Guerthault)—0.40 to 0.72 parts copper per million parts (King and Etzel)

1/2.5 Sodium Potassium ratio of milk is ideal 9.7 to 24.6 (Sodium not too low to be backed down by excess of potassium to cause Carbon-di-oxide, poisoning according to Bunge)

ASH COMPOSITION OF MILK IN PERCENTAGES

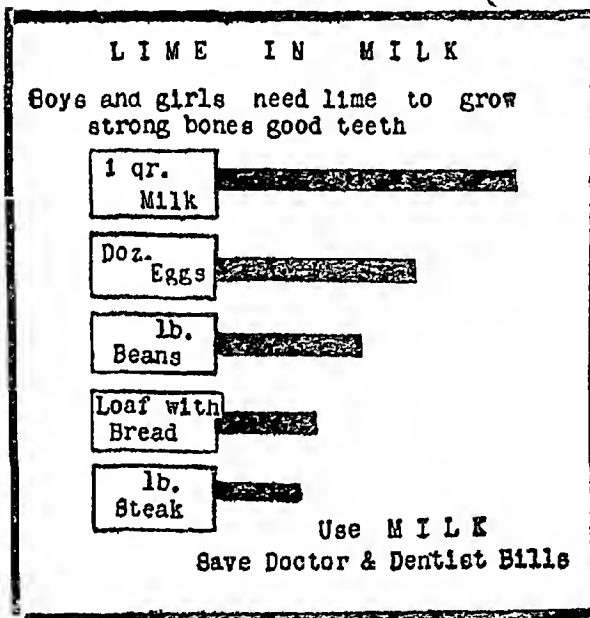
	Acid neutralising				Natural		Acid forming		
	Pot	Sod.	Cal.	Mag.	Iron	Protein	Phos	Sul	Sand. Chlor.
Milk	24.6	9.7	22.05	3.05	.05		28.4	0.3	0.04 142
Waterfree							25.385		
(Solids)	1.146	.400	.988	0.92	.0192		.738	—	— 0.846

DETOXYL TEST OF MILK

The supreme and acid test of science of a food lies in its Detoxyl content or alkaline balance. Dr. Drews of Chicago names calcium, magnesium, sodium and iron as essential. For finding out the D. test one has to multiply the Detoxyl value by 40 and divide by Protien contents. If the Test is more than one then the food is positive or alkaline and if it is less then it is negative or acid. Acid foods cause much discomfiture and harm by causing carbonic, sulphuric, phosphoric, uric and hippuric acids

Detoxyl test of milk is 2.3 (Quite a positive food if only taken fresh and raw).

THE MINERALS IN MILK



Consumers of milk recognize that it is a valuable food but they seldom realize that it is a natural source of at least 25 different minerals. Those persons who can claim some familiarity with the modern science of nutrition may know that milk is our best dietary source of the important lime salts, or calcium phosphates, and they may be aware that it supplies several other desirable minerals, but even these *cognoscenti* may be surprised to learn that milk also

contains lithium, strontium, vanadium, rubidium, titanium and germanium, all rare elements.

Although milk solids comprise only one-eighth of the volume of cow's milk and the minerals constitute only a little less than 1 per cent of its total bulk, the average milk supply customarily possesses nearly one-third of all the known chemical elements. None of the many minerals in milk is visible because all are in solution or suspension, usually in various combinations with organic or inorganic substances. Some of these minerals are relatively abundant, while others are present in such small quantities that only unmeasurable traces of them can be detected by chemical analysis.

ROMANCE OF THE COW

The minerals of milk are separated from it by incineration at a lowered heat. At the end of this process there remains a white ash which shows an alkaline reaction. About one-eighth of this ash is calcium, a little more than an eighth is potassium, one-tenth is phosphorus, another tenth plus is chlorine, and about one-twentieth is sodium. The residue contains appreciable amounts of sulphur, magnesium and iron, in that order. Only traces are found of silicon, boron, and the group of minerals mentioned in the first paragraph above. Occasionally the analyst will encounter traces of barium, chromium, tin and silver in milk.

Since the minerals constitute only one per cent or less of milk, the remainder of it is made up of organic compounds of hydrogen, oxygen, carbon and nitrogen which form the butter-fat, proteins and lactose, or milk sugar. Sulphur and phosphorus are also represented in the three principal proteins in milk, the nutritional functions of which are to replace and repair bodily tissue. Casein is the chief of these proteins, the other two being known as lactalbumin and lactoglobulin. Several others are also present but in exceedingly small amounts.

The various minerals found in cow's milk are, in general the same as those which occur in the human body. Our bodies are comprised of some 65 per cent oxygen, 18 per cent. carbon, 10 per cent hydrogen, 8 per cent. nitrogen, 1.5 per cent. calcium and 1 per cent. phosphorus. The remaining 1.5 per cent is made up of many different minerals, the functions of some of which are as yet unknown. The dietary duties of a number of the minerals in milk are also enigmatic, but they are probably in this food for a definite purpose.

Calcium and phosphorus are the most significant of the many minerals in milk, since these are the elements needed for the construction of the bones and teeth. If calcium is lacking in the diet of young children, growth is retarded. In cases of severe deprivation of this mineral and of the substances which cause it to deposit, a troublesome bone disease known as rickets will develop. Adults likewise need a supply of calcium, although not as much as do children whose skeletal structures are in the formation. Pregnancy and lactation increase the need for calcium.

Scientific experiments have shown that not less than one gram of calcium or about half as much as there is in one front tooth, is required everyday by the growing body. Since cow's milk averages 0.12 per cent calcium, the minimum amount of this particular food needed to furnish the daily gram of the mineral is one quart, or 908 grams. The calcium in milk is, furthermore, in a form which permits of the most favourable storage in the body, for scientific investigations have demonstrated that this type of calcium is utilized more completely and efficiently than is the calcium that occurs in vegetables. The daily quart of milk has the advantage of supplying plenty of phosphorus, as well as protein and the vitamins which are so essential to growth and good health. The body needs about twice as much phosphorus as calcium.

MILK ÆSTHETICS & ANALYSES

The activator of calcium is vitamin D, sometimes known as the sunshine vitamin, because the ultraviolet rays of sunlight acting on the skin or upon certain food fats will stimulate the formation of this, antirachitic vitamin. While milk contains some vitamin D, the quantity is not sufficient to prevent rickets. Dependence for an adequate quantity of vitamin D in the diet must, therefore, usually be placed upon other foods rich in this substance, such as cod-liver oil or egg-yolk. The amount of vitamin D in milk may, however, be increased by scientific feeding of the cattle with irradiated yeast, or by irradiation of fluid or powdered milk. There are now on the market a number of vitamin D milks, the proper use of which will prevent and cure rickets. The milk furnishes the necessary lime salts, and the vitamin D causes proper deposition of these minerals in the bones.

Another attribute of the calcium in milk is its favourable effect upon the assimilation of iron. While milk contains only 0.00024 per cent of this particular mineral, or a little over two milligrams to a quart, what there is of it is of exceptionally high food value. The body itself has only 0.004 per cent iron and requires a daily intake of only from 6 to 16 milligrams, or about as much iron as would be equivalent in size to the head of a pin. The higher figure is necessary only when the calcium intake is deficient.

Modern research has proved that copper functions with iron in bringing about the assimilation of iron to form haemoglobin in the blood. When there is a deficiency of haemoglobin, the condition known as anaemia results. Milk contains a small amount of copper about 0.27 milligrams in a quart. Compared to other foods, such as liver, nuts, legumes, cereals the amount is slight. It is interesting to note, however, that a diet of whole wheat bread and milk supplies an adequate quantity of iron and copper for human nutrition. Such a combination is, in fact, a perfect diet from every nutritional standpoint, and will sustain life indefinitely.

With the exception of iodine, the amounts of the minerals in milk are more or less fixed and vary only slightly in content. There is some recent scientific evidence to indicate that the calcium and phosphorus in cow's milk may be slightly increased by irradiation of the cattle with carbon arc lamps, and that such milk will be more effective in preventing or curing rickets than ordinary milk. Although the content of certain vitamins in milk can be greatly increased by scientific feeding of cows, the important minerals in milk are, in general, not appreciably affected by such measures. The presence of some of the rare minerals may, nevertheless, be influenced by the chemical composition of the cow's rations.

Iodine can be increased in milk by feeding aliments containing iodine such as kelp, to the cows producing the milk or by adding an iodine compound to the feed. Similarly the iodine content of milk supplies in different parts of the country will vary somewhat, according to the richness of the local feeds in this substance.

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Since iodine is important in nutrition because of its influence on the thyroid gland and as a preventive of goitre, proposals have been made for a deliberate increment of this mineral in milk. Medical authorities believe that such procedures may be helpful so long as the administration of iodized milk remains under the control of physicians familiar with individual cases, but they are sceptical as to the value of, and lack of harm from, shotgun methods

Regarding the prophylaxis of goitre, the Journal of American Medical Association says "Milk doubtless can be useful in such endeavours, as can other food products. The mode of preference should be left to the physician, however, and not to the food propagandist."

When milk is processed, as by pasteurization, condensing, or drying, it may acquire small quantities of metals from the apparatus employed. Thus, the drying of milk on steel rollers causes a slight increase in the iron content of the resulting milk powder, and the manufacture of evaporated or condensed milk, in large copper vacuum pans may add tiny amounts of copper. Such increments are beneficial and not harmful, as the quantities are very small and the minerals involved are desirable. There is no evidence that canned milks acquire any appreciable amounts of metal from the containers in which they are packed. These canned milks are equivalent for all practical purposes to the best grades of pasteurized fluid milk.

Pure milk has long been recognized as the most important of the protective foods of mankind. Milk and green vegetables were given the appellation "protective" by Professor E.V. McCollum in 1918 because they provide ample amounts of calcium and vitamin A and thus serve to protect the body against the deficiencies of other common food stuffs. Fruits and eggs were subsequently admitted to the category of "protective foods" but no other single food can equal milk in general nutritional value. Milk is our most nearly perfect food, and not the least of its virtues is its exceptional content of desirable mineral substances.

Dr J A. Tobey (*Scientific American*. July 1938).

GOSPEL OF MILK.

Oh India, never forget that your National Dietetic Ideal is not non-Vegetarianism. All the World looks out to You to receive Inspiration in Food Reforms from you and you alone.

Nor can you live upon mere Farm-Products as, Pure and simple Vegetarians. It is a sheer absurdity to pull on, on Farm Products exclusively.

Dairy Products are not luxuries at all, they are necessities of Life; and as such you cannot manage to live long without incurring a severe loss to your Health

MILK ÆSTHETICS & ANALYSES

and Happiness Forget not that Your National Food is Lacto-Vegetarianism Develop the Cow, Your Mother of Mother, so that she may develop you in return.

Why do you forget that your life-span is no more than 24 Years ? How shocking is the slaughter of the Innocence—the small and smart little Infants—the buds of Humanity. Myriads upon Myriads are passing into the jaws of *Kal Devta* for no fault of theirs Is it less Cruel and less Shameful to India ?

**FIVE TIMES AS GREAT THE CHILDREN'S DEATH RATE OF
WORLD IS NO SMALL CURSE.**

**WAKE UP, OH INDIA, TO THE SAD NEED OF THE DAY;
AND BE SAVED.**

Forget you not that you may pile food before your children, still starve them, their bones by not supplying them Lacto-products in good shape and bulk.

Give them more milk, sweet milk. pure milk, give them milk, more milk and still more milk. And add some fruit drops or greens for iron

Let us learn the Gospel of milk and rise in the scale of the Nations of the world.

**BENEFICENT TO ALL FOR ALL TIMES IN
ALL CLIMES**

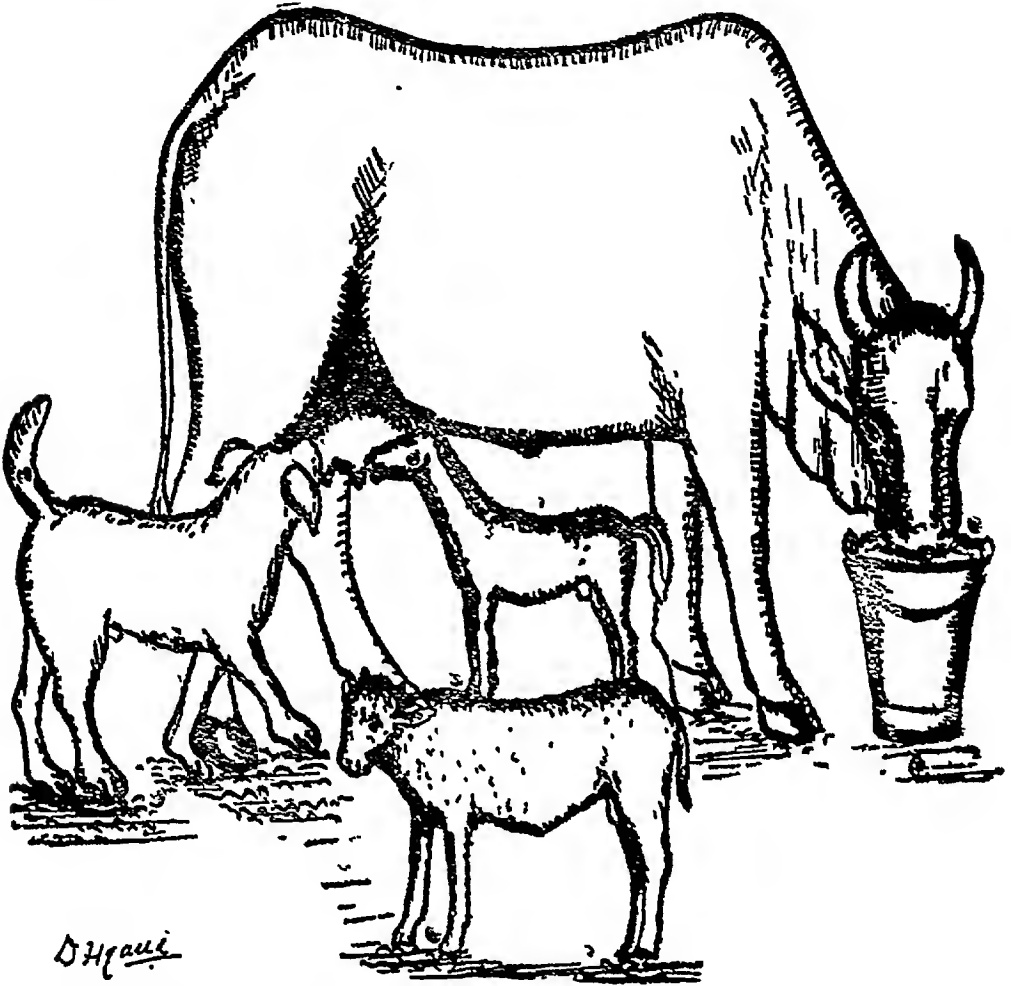
Milk and its various products are a boon to —Young and Old, Infirm and and Invalid, Rich and Poor, Sick and Healthy, Aristocrat and Pauper, Master and Servant, Yogi and Artist, Vegetarian and Non-vegetarian, Capitalist and Socialist, to one and all without bar of caste, colour, creed, convention age or stage.

WHO ENJOYS THE BLESSINGS OF THE COW?

Forget not that only a fourth part of Indian Population gets dairy products Per capita incidence of milk is only five ounces per diem, and ghee only 9 lbs per year averaging in the neighbourhood of a Tola a day per head Moreover of fruits, he does not have any worth the name Compare the lacto-products that enter the dietary of the Western countries Their luscious dishes are overflowing with them Even compare what dairy products are rationed out to soldiers in the army. Verily indeed an alarming bulk of Indian starvelings are destitute of even jail diet

ROMANCE OF THE COW

How sad yet how true it is that the donkeys and dogs are drinking the milk and the rightful calf thirsts without it! It is only the tommies and dummies



of humanity that feed at the cost of small budding flowers of humanity. What a terrible 'Slaughter of the Innocents' is going on in India a land of Cow-Worship and Humanitarianism?

FORGET NOT THAT AS THE RATION SO THE NATION

**REMEMBER THAT THE RATION MAKETH NATION :
POOR THE RATION : POOR THE NATION.**

CHAPTER XIV

LACTO-DIETICS & THERAPEUTICS

- 1 Nature's Perfect Food.
- 2 Chemistry & Biology of Milk.
 - Bacteria Salts
 - Vitamins
 - Potency of Milk
 - Milk Proteins
 - Milk Foods
 - Most Perfect Food
 - Special Value
- 3 Medicinal Values of Cow's Products.
- 4 Medicinal Values of Urine.
- 5 Medicinal Values of Dung.



LACTO-DIETICS & THERAPEUTICS



The cow is health,
The cow is wealth,
The cow is prosperity,
The Sumum Bonum of us all.
The medicinal and nutritive values of
cow's products are peerless
As the Ration, so the nation
Ration maketh a man,
Man maketh nation
Poor the Ration, Poor the nation.



LACTO-DIETICS & THERAPEUTICS

NATURE'S PERFECT FOOD

MILK IS THE IDEAL LIFE, HEALTH AND STRENGTH COMBINED

Next to air and water food is indispensable for physical existence. It is as necessary for a body as fuel for an engine. From the earliest dawn of human history, great thinkers and scientists have been endeavouring hard to find out an ideal fuel—the most perfect food for the human engine.

The human body in its simple construction, consists of bones, muscles, fatty tissues and the enveloping skin. Within some of the cavities of the body are the various special organs such as heart, brain, lungs, stomach, etc. All these parts of the body possess different functions and need different nutrients for their maintenance and growth. Bones need mineral matter for their daily waste and protein is required to repair the wear and tear of the muscles and other nitrogenous tissues. Fats and carbo-hydrates are used to maintain the body temperatures and to give energy to different organs such as heart and lungs to carry on their proper functions. Fat in addition stores up the fat in body. There is another substance recently discovered, i.e., vitamins which are equally necessary for health and growth.

Thus mineral matter, protein, fat, carbo-hydrates and vitamins are the real agents to keep up the human body. But their presence alone is not sufficient and they may harm or fail to fulfil their functions so long as they are not present in proper quantity and of right quality. Since milk is Nature's first provision of food for the young, it is reasonable to believe that it contains elements necessary to sustain life and that these are in proper proportion. The very fact that a child when delicate and quite helpless thrives well and accumulates strength on milk shows the perfectness of it. Thus Thomas Alva Edison, the great scientist, truly said, "Milk is the only balanced ration—balanced by the great Chemist who is far away." He further remarked, "I came in with milk and I guess I'll go out with it." And that is only possible with cow's milk which is the best natural substitute for mother's milk.

INGREDIENTS OF MILK

Milk contains all the ingredients necessary for all the functions of the body. It is composed chiefly of water, protein, sugar, fat and mineral matter. Some objection is raised about the high percentage of water in milk. But nature intended milk to function as a perfect food, so she must add to it requisite amount of water to meet our body requirements. Moreover water serves an important

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purpose in holding the solids of milk in solution or suspended in the form of minute particles and also diluting the milk to make the solids easily digestible and immediately available for the nourishment of the young babe, the sick and the old with their low vitality and weak digestion. The protein of milk which is present in the form of casein and albumen builds and repairs muscles and other tissues. There are different kinds of protein which are made up of many amino acids and all these are needed to form the protein of the body. Practically all foods lack in one or the other amino acids and thus would not help for perfect health and normal growth. The protein of milk is the only exception because it is very complete and supplies all the different amino acids in required proportion.

Thus milk furnishes protein of a quality quite superior to that of all other foods and is further considered the most valuable because it is easily digested. Milk sugar (carbo-hydrates of milk) provides heat and energy in the body. Its composition is different from all other sugars of the vegetable kingdom and is most easily assimilated by the body. Hence it has been of special use in the medicines. Mineral matter has many important functions in our body. It is found in all the vital parts and more or less controls all the life processes. The life centre of all the cells are rich in phosphorus and the skeleton is largely composed of calcium (lime) combined with phosphorus. The newly born baby growing rapidly in skeleton and tissues, needs a more liberal supply of it especially calcium and phosphorus. But these are not always sufficiently abundant even some times in mixed diet. The ash (mineral matter) of milk, however, is present in sufficient quantity and of right quality and is particularly rich in its lime content. There is more lime in a pint ($\frac{1}{2}$ seer) of milk than in a pint of lime water.

The fat of milk or commonly called butter fat supplies heat and energy like sugar and is also used for making up the fat in the body. As milk fat is the most important constituent of milk its quality is superior to all other fats of the animal and vegetable kingdom too. Butter fat is present in milk in the form of very small globules and thus is capable of assimilation by the newly born babe or the sick whose power of digestion is extremely weak. No other fat takes the place of milk fat. Prof. F. G. Hopkins of Cambridge University during his experiments on nutritive value of different foods found that lard, cottonseed oil and vegetable fats altogether failed to keep up the health and growth of the animals. Milk also contains practically all the vitamins so far discovered. The vitamins are the vital food elements otherwise known as "accessory food factors" the chemical composition of which is not fully known yet. But by feeding experiments it has been definitely proved that they are most necessary for health growth and protection against certain diseases, low vitality, grave depression, stunted growth, beri-beri, paralysis, scurvy, rickets, weak vision and general disorders all are the outcome of vitamin deficiencies. Most commonly every food lacks one or the other vitamin and no single diet except milk contains all of them in fair quantity and of proper quality. Milk being rich in all the important vitamins serves as the best protective food against common disorders and various troubles of the mind and the body.

HIGH VALUE OF MILK

Apart from the chemical stand-point, very recently the biological study of foods has brought to light many unknown facts about the high value of milk and its products. Investigations and observations based upon the influence of various food stuffs upon growth and health of animals have simply revolutionised the old ideas as regard the problem of nutrition. Dr. E. V. McCollum of Hopkins University of America after conducting a series of experiments in co-operation with other chemists and food experts, has issued a valuable book "The Newer Knowledge of Nutrition" on this subject. He and his co-workers as a result of their research work came to a definite conclusion that amongst the different food stuffs all the proteins, sugar, fats and minerals are not of same quality and those from milk are perfectly balanced and of a very high order. Apart from that milk fat contains a fat-like or fat soluble substance which is found in addition to butter fat only in yolk of eggs and certain leafy vegetables. This fat soluble substance known as accessory food factor or vitamin A is chiefly responsible for growth and health of animals including man.

Its absence or even deficiency would cause lower resistance to infection especially of the upper respiratory tract, cessation of growth and would develop a disease of the eyes which would ultimately result in complete blindness, and if persisted it would end in death. But if this substance particularly in the form of butter fat were restored in time the disease would disappear and the young animal would return to its former health and vigour and resume normal growth. In fact this substance in addition to the supreme quality and the high food value of its constituents makes the use of the milk indispensable for the children. And it has been rightly said that for the purpose of stimulating growth particularly in children butter fat and other constituents of milk have no substitute. This very substance makes milk of special value for the invalids. In hospitals it has been shown that wounds heal with surprising rapidity, and digestion, vision and hearing improve considerably and patients report feeling well when they have milk.

Not very late investigations were carried in London by the Medical Research Council to find the most suitable diet for the children of school age. The experiments were made on five hundred boys of the same age and grade and 30 to 50 boys in each group were tried with different food stuffs in addition to their basic diet. Dr. H. C. Carry Mann in his report issued in 1926 summed up his conclusions that "while the importance of milk as an item in the diet of children has long been widely recognised, it is nevertheless startling to learn that addition of one pint ($\frac{1}{2}$ seer) of milk a day to a diet which itself satisfied the appetite of growing boys could convert an average annual gain of weight of 3.85 lbs., per boy into one of 6.98 lbs. per boy and an average increase of height from 1.84 inches per boy to 2.63 inches per boy." He further remarked, "coincident with this striking increase in weight and height boys receiving milk could be

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easily picked out by a casual visitor as being so obviously more generally fit and there was a complete absence of illness among them during a period when in the other houses there was a higher sick rate than usual "

Besides its great nutritive value milk has another special advantage; it does not excite the nervous system and other organs of body in general as meat and meat extracts and all alcoholic stimulants do. Having all the qualities of true elixir of life, milk is the most efficient type of stimulant but it is far superior to strychnine, quinine, ergot, caffeine and other artificial stimulants in whipping up the living tissues and holding them pleasantly to their proper activity without the subsequent reaction and collapse as usual in the case of the latter. This very fact induced Allies to stimulate all of their soldiers before sending them to battle with milk instead of beer, claret, wine and other liquors. Furthermore milk—though a vital natural tonic, is not addicted to set up bad habits and to increase blood pressure invariably as drugs and artificial tonics always do. The French Government realising this ordered to all cafe proprietors to push the sale of milk as a beverage superior to other popular drinks like coffee, tea and cocoa.

The general complaint that milk is somewhat expensive and could be available only to well-to-do people is based on wrong assumption and lack of knowledge about the food nutrition. Mr A. D. Allen on the authority of Prof. Sherman of Columbia University has written "In reality milk is cheap at any price. No other food furnishes health and growth promoting qualities so cheaply as milk. It is the most perfect food known. One quart (1-14 seer) of milk costing 6d or 7d (3 to 4 annas) is equal in energy to 8 eggs, 15 oz. of beef steak, 3½ lbs. of cod fish or 2 lbs. of chicken all of which would cost considerably more. It is enough to say that milk is Nature's own food, the most perfect we have. It is essential in the diet of both young and old." Similarly a lb. of butter (3600 calories) is equal to 3 lbs of bread, 21.25 lbs. of oranges, 3.5 lbs. of meat, 9.5 lbs of potatoes, 12.5 lbs. of bananas and 53 eggs in energy value. Butter is all food, no waste—97.88% digestible. According to Prof. Sherman, American cheese (Cheddar cheese) has about twice the food value of average meat. It is a fair general estimate that a given amount of money spent for American cheese will buy about twice as much food value as it would if spent for meat. Milk and butter in addition contain the vital substance indispensable for sustaining life—vitamin A.

Charaka, the founder of Indian Materia Medica, has remarked in his book. "Milk in general is essential for the health and growth of man and all four-footed animals. Cow's milk is the best of all. It is 'life' for children, 'health' for youths, and 'strength' for the old. It is very tasteful, has pleasant odour, is easily digestible and maintains the equilibrium of the four humours." In many verses of the Vedas it has been said that milk is the ideal human food and is referred as the true nectar of life.

CHEMISTRY AND BIOLOGY OF MILK

MILK-FAT

A single drop of milk contains as many as 100 milk fat globules. Milk on an average contains 40% palmitin, 34% olein, 10% Myristin, 6% butyrim, and 1 to 3% of other fats such as stearin, laurin, caproi etc. Such dozen fats are divided into soft and hard fats. Soft fats predominate in the cow's butter fat and hard in the buffalo's. The soft ones are superior in taste, digestion and nutrition.

(Slyke, Dr. Godbole and Sidhgopal)

Fat in milk is wholly digestible while in any other form only 94%.

VITAMIN CONTENTS

Cow's milk whole and fresh is the safest and surest source of vitamins, enzymes, friendly bacteria and such other essential ingredients. Milks vary in these essential contents essentially with respect to species, individual, age, health, stage of lactation, portion of milking, climate, environs etc. It contains vitamins as follows A+, D, 0 to ++, E+, B, + B₂++, C+. Cow's milk is richer in vitamins than some ghees

(Vitamins-A survey of present knowledge,)

(British Medical Research Council)

ENZYMES

Milk contains Galactase, Lactase, Diastase, Lipase, Salolase, Catalase, Peroxidase, and reductase as enzymes. These destroy toxins and ptomaines in the system. Poisons in the body are eliminated, and digestion helped. They prove to be useful for glandular health and keep up metabolic balance. To secure its blessings milk should be used fresh and clean, cold milk is the best. It need not be heated for the fear of bacteria for its own enzymes and bacteria controls any untoward chemical reactions for about two to three hours of milking. Again the bacteriophages of milk are powerful enough to devour pathogenic bacteria if only they are allowed to have the upperhand by keeping milk in general hygienic conditions.

Unheated milk has more advantages than the supposed disadvantages, only if and when kept clean.

BACTERIA

Milk may contain about 24 kinds of bacteria if left long exposed to contagion and infection. Nature has provided in milk and buttermilk lactic acid bacteria as the most benighted bacteria in the world. They may be from 5 to 10 lacs in one c. c.

ROMANCE OF THE COW

of milk and 5 to 10 crores in the same amount of sour milk. If these products are kept free from exposure these friendly bacteria thrive in large numbers and kill almost all of the 120 kinds of probable bacteria—the intestinal flora in the human system (Dr. Kellog in auto-intoxication and colon hygiene.)

Unheated milk alone contains in the fullest amount all these essentials which volatilise to a great or small extent on heating.

SALTS

For milk salts refer to the chapter on milk aesthetics and analysis.
(Fundamentals of Dairy Science—A.C.S. Monograph Series 41)

MEASURING THE SUNSHINE IN MILK

Parents and physicians alike rejoiced when it became possible to put vitamin D into milk. Milk is in many ways an ideal food for infants and children but it is sadly deficient in the sunshine vitamin, as vitamin D is often termed. Now scientists have gone a step further and found a way to measure the amount of sunshine vitamins in the milk when it is put there by the action of ultra-violet light. This is important. Baby specialists and nutrition experts have recently pointed out that lack of such a measure was one serious drawback to relying on vitamin D enriched milk as the sole source of this vitamin. The method of measuring the sunshine in milk was developed by Dr. H. C. Rentschler of the Westinghouse Research Laboratories and tested by Dr. G. C. Supplee in the plant of the Borden Company.

MILK : QUALITATIVE FOOD

Two batches of rats were fed rich milk and poor milk. In the rich milk batch A there were 17 female and 5 male rats. The average maximum weights in A were each 259 and 352 grms respectively, while in B they were 181 and 244 grms. only. The average life span for the A's was 746 days as against 359 of B's. A had 477 young ones born of which 264 survived. They were suckled and weaned at a full average size and vigour, while in B, births were only 31 and survival beyond 2 days was nil. All died of lung infection.

(Fundamentals of Dairy Science)

VITAMIN COUNTS PER lb.

VA:

Butter 8000 to 22000, Papaya half the butter. Spinach (fresh) 25000, whole milk 1000, Lettuce 750 to 3000, Codliver Oil 80000 or more.

Carrots 10000 to 30000, Eggs 9000, Eggs' Yolk (yellow substance) 27000, Ghee sometimes not as rich as even whole milk largely owing to adulteration and heating in open pan (oxidation).

Cow's ghee is richer in Vitamin A than Buffalo ghee owing to its very yellowish tinge known as carotene closely allied to Vitamin A—Carotinene.

POTENCY OF MILK

Regarding the supply of mineral matter, it is to be noted that one gramme of cheese supplies as much calcium as 4.5 grammes of wheat flour or 95 grammes of polished rice. In fact, it has been experimentally proved that a pound of milk contains more calcium than a pound of lime-water.

From the point of view of vitamin-potency, it has been further shown that one gramme of butter supplies as much Vitamin A as 75 grammes of vegetable oils and one gramme of cream contains as much vitamins as one gramme of Cod-liver oil.

The comparative food-values enumerated above clearly establish the superiority of pure milk and butter over other food-stuffs.

From the statistics available in India, it appears that there are many more lepers in the Southern parts of India than in the Northern. One of the explanations offered by medical people for this fact is that less milk is taken daily per head in the Southern parts than in the Northern and as a consequence, it is inferred that milk is a preventive to a disease like leprosy. Shreeman Swami Kuvalayanandji has noted in his authoritative journal of Yoga Meemansa his satisfactory findings in his milk cure experiment on a leper for six months.

Another very interesting fact has been very recently made known in Europe that successful injections of milk have been given to prevent Gonorrhoea.

MILK PROTEINS

Animal foods, therefore, not only are valuable because they furnish rich sources of utilizable protein that quantitatively supplements this deficiency in vegetable foods; but also because they supplement qualitatively the deficiencies that occur chemically in the amino-acid make up of vegetable protein so that these are used more efficiently in meeting the body building requirements of the animal organism.

Milk proteins exceed wheat, oat, barley, pea, soyabean proteins in points of growth rate and weight. They conduce more growth and a more efficient utilization than with any of the cereal or legume proteins, fully as good as the muscle or liver protein and only kidney protein gave better results.

Milk protein proved superior to others in points of fertility, success in rearing young, span of life upto and including the onset of old age etc.

ROMANCE OF THE COW

Only 30 to 40% of legume protein 50 to 65% of cereal protein and 75 to 100% of milk protein are utilizable. (Fundamentals of Dairy Science)

MILK FOODS

Milk in different forms have yielded several products and preparations. Its sugar (lactose) and protein (casein) have given numerous medical foods such as Sanatogen, Glaxo, Humanised Trufood, Humanised Ambrosia, Beria food, Lactogen, Klein, Trumilk, Milo food, Ovaltine, Allenbury I, II, Horlicks Malted milk, Neaves, Dorsea, Glaxo-ovo, Lactarine, Galactogen, Sanogen, Plasmon etc. (Indian Medical Record, Feb. 1933)

But these foods often have doubtful values, and never commensurate with their prices. Milk in its natural state is the best of all the above, only one has to take it in a clean, pure and suitable form and manner.

BUTTER MILK

B. milk contains 97. solids, 165 calories, 3.5% proteins of high quality and great digestibility, lactose 4.5% has the most digestible carbohydrates Nature provides and contains 75% of the valuable minerals of milk. Its lactic acid contents exerts a physiological action making for a healthy condition of intestines rich in vitamin B. (Monogram on Milk)

The lactic acid bacteria contents of sour milk corrects the Aliment by destroying intestinal flora and as such is hundred times richer than milk. (Dr. Macnicoff)

MILK — NATURE'S MOST PERFECT FOOD PERFECTED STILL FURTHER BY MAN

Any mother, who has watched her child, fill out and grow fat so quickly that at 6 months its weight is doubled, must realize that in milk we have the perfect food containing all the elements necessary for satisfactory nutrition, and in a suitably balanced form. Milk is a veritable miracle of nature, providing, as it does, for all the activities of the human body. There is the protein which builds and repairs the tissue, and fats and sugars which provide heat and energy, the minerals which help to construct bone, and the vitamins which are essential for growth, health, resistance to disease, and fertility.

Most of us have taken the trouble to make ourselves familiar with those foods that contain the vitamins which modern research has shown us are absolutely essential to health. We are careful to include in our daily diet carrots, tomatoes, spinach, raw fruits and green vegetables, all rich in vitamins. We have learnt to eat them raw when possible, and how to conserve the vitamins

if they do have to be cooked, but how many of us consider milk, which contains *all* the vitamins, some in a considerable quantity, as suited rather to infants and invalids than to ourselves?

A MATTER OF HISTORY

The time has yet to come when we shall take for granted the inclusion in our diet of a pint or so of milk per day. Yet even without a knowledge of dietetic values a little reflection will evince the immense superiority of milk and all foods produced from it over other foods. It is a matter of simple history that those races of men whose staple articles of diet have been dairy products have always been the healthiest, the most long-lived and the best able to survive the rigours and privations with which man in his struggle for existence has had to contend. Here in India is vividly illustrated what a great difference two different dietaries can effect on adjacent races. We all know what a poor creature physically the average man of the plains is. His staple food is rice and other cereal grain. Compare him with the magnificent grand physique of the Sikhs and other Himalayan peoples whose diet, while it is frugal, consists largely of goat's milk and vegetables.

VITAMIN D.

Don't think for a moment that any milk from any cow is the perfect food that it can be, for the vitamin content, which is of such great importance, is dependant to a very great extent on the diet and habits of the animal. Vitamin A, the growth promoting and anti-infective, is most abundant and is nearly always present. Vitamin B and C, which are necessary for the health of the nervous system, are also plentiful, so is C; though in a small amount. It is vitamin D so necessary for the health of the bones and prevention of rickets, whose existence bears a very definite relationship to the cow's diet. If the animals are stall-fed on oil cakes and other synthetic foods the vitamin quality of the milk and the butter made therefrom is definitely depreciated. Sunlight is the original creator of the vitamins, and unless the domestic milk producing animals have ample opportunity to graze in sun-lit pastures we cannot expect their milk to possess the full complement of vitamins as intended by Nature.

IRRADIATION

To most of us in India, where for so many months in the year not a blade of green grass is to be seen, it may be distressing to realize that our milk must, of necessity, be deficient in vitamins, but there is a way over the difficulty. Science has stepped in, and now milk, however deficient in vitamins may be, "irradiated" with these essentials. It is done by the milk being exposed to the ultraviolet rays, the most potent rays of sunlight in shallow trays. Experiments have been conducted in the treatment of rickety children by means of milk

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irradiated in this way, and very successful results have been obtained. It is a pleasant thought that the process does not affect either the taste or the smell of the milk to any appreciable degree.

In England and America, where the process is beginning to spread to quite an appreciable extent, irradiated milk should prove of tremendous importance to the health of the young generation. Most mothers boil their milk or have it pasteurised, knowing the danger there is of tubercular infection. But both these processes lower the vitamin content (Vitamin C being wholly destroyed) and render the milk indigestible for infants.

SPECIAL VALUE OF MILK

In the same (1921) year the Ministry of Health, in conjunction with the Medical Research Council, made arrangements for an exhaustive investigation extending over four years into the nutritive value of milk in the diet as compared with certain other foodstuffs. No investigation of this kind either before or since has been carried out with such elaborate controls and precautions against adventitious errors. The results obtained were without dubiety and very markedly confirm what might be inferred from general physiological knowledge that milk is a food of unique value in nutrition. On the investigation that the "unmistakable betterment in nutrition was proved by trial to be due not to the relatively small increase in the fuel value of the dietary nor to the extra protein supplied in the milk but rather to more specific qualities of milk as a food. Quantitative results of this sort, established as they have been by rigid evidence, show that the real adequacy of a diet cannot be determined without close scrutiny of its qualities. The nutritional influence of its constituents is not to be measured by their value as fuel or building material alone."

Other investigations of a like nature have been carried out on a larger scale but in view of the extensiveness of the investigations, controls could not be so rigidly applied as in the case of the inquiry just described. Nevertheless valuable results have been obtained not merely in regard to the nutritive value of milk as such but also in regard to the comparative value of raw and heated milk.

During 1927 and 1928 an investigation was carried out in Scotland under the direction of Orr and Leighton into the value of raw whole milk when added to the ordinary diet of school children. The value of separated milk was also compared with that of whole milk. The general conclusions arrived at were that the addition of milk to the diet produces a marked improvement in children of all school ages. This improvement is shown both by greater increase in weight and height and by better general condition. Separated milk proved to be of great value in promoting growth and hitherto its nutritive value as an addition to the diet of children would appear to have been underestimated. The diet

of the ordinary working class household may have a sufficiency of the constituents contained in the fat of milk but not of those contained in the non-fatty portion.

In 1930 Leighton and McKinlay carried out an investigation extending over four months in which two groups of 5,000 children, in addition to their ordinary diet, received respectively (1) $\frac{3}{4}$ pint of raw milk or (2) $\frac{3}{4}$ pint of pasteurized milk. The results were controlled on 10,000 other children who received no extra milk in their diet. The conclusions reached were that the addition of milk to the diet was reflected in a definite increase in the rate of growth both in height and weight. The effects of raw and pasteurized milk on growth in weight and height were, so far as could be judged, equal.

INTENSE SOUND MAKES MILK MORE EASILY DIGESTIBLE

Make a loud enough noise at milk and the baby will digest it more easily, that, in effect, is the discovery reported by Dr. Leslie A. Chambers of the University of Pennsylvania. Dr. Chambers spoke before the American Dairy Science Association meeting jointly with the American Association for the Advancement of Science. The apparatus used in the experiments consisted of a heavy steel diaphragm, driven by the oscillating electric current. Similar devices are used for submarine signalling. Over the diaphragm Dr. Chambers flowed a thin stream of milk, while he caused it to vibrate very strongly at various rates. The lowest vibration rate he used was 360 cycles a second, which is the pitch of F-sharp in the middle of the piano keyboard. The highest rate was 3000 cycles a second, about three octaves higher than middle F-sharp. The effect was to alter the curd-forming character of the milk. Whereas the milk used normally formed a hard curd, difficult to digest, when acted upon by the pepsin of the stomach, after treatment it formed a soft, easily digested curd. Soft-curded milk, is especially desirable for feeding babies, as well as older persons with "weak stomachs." Some cows naturally produce soft-curded milk, but many do not. Dr. Chamber's experiments have demonstrated a simple mechanical method to make soft-curded milk at will, out of any kind of milk.

—Scientific American.

MEDICAL VALUES OF COW'S PRODUCTS

Milk is a purificatory agency. In modern India, especially, when vitality and heavy mortality reign supreme, the value of milk can in no way be exaggerated. It increases semen. Curds are a favourite remedy of diarrhoea, whey is refrigerant, butter is used in constipation, Ghee is tonic, emollient and cooling, Cream is strengthening. Wounds must be dressed by the application of a cloth drenched in tepid ghee to palliate intense pain and effect a speedy cure.

—Sir Bhagvatsinh in his Short History of Aryan Medical Science.

MEDICAL SCIENCE—COW'S URINE

In Cow's urine dwells the Ganges. It is so purifying says the scriptures. These statements shall now be tested on the touchstone of science. It is administered both internally and externally. It is prescribed in colic, piles and other diseases. It is used extensively in purifying metals, like tin etc. (Ibid) Kautilya in his Arthashastra describes cow's bile (*Gorochan*) and urine as valuable.

Professors Symmers of Belfast and Kirk of Ulster conducted a series of experiments upon the clinical values of Urea and crystallised their investigations in the *Lancet* (4th December 1915) to the amazement of the western medical world and to the gratification of us, sons of Aryan line, to whom those results were long familiar. They found out the following principles in Urea :—

- (1) Urea acts as antiseptic in the presence of blood.
- (2) It is innocuous to animal tissues.
- (3) It is non-toxic in the quantities used in wounds.
- (4) At least half the labour is saved thereby.
- (5) Processes of repair are not at all retarded during its use.
- (6) Most striking results will be obtained by its use as a first aid in dressing.
- (7) It prevents suppuration arising in wounds from chronic blood infections.

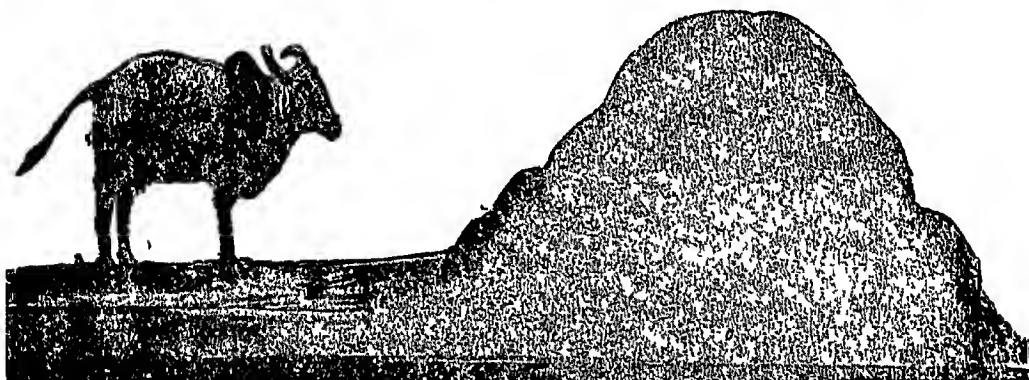
In Urea we have a substance which in the dry state is pronouncedly stable, which is practically non-poisonous, and which even in low concentration (3%) affects the growth of bacteria,... and which is markedly bactericidal to non-sporing bacteria in the higher percentages. Thus bactericidal effect is active in the presence of blood and such like organic fluids.

Another set of experiments performed by Drs. Crawford, Hamilton and McIntosh of America, has proved a decade back, the use of Urea as a diuretic in advanced heart failure. Urea was given with a view to re-establishing a normal water-balance by maintaining an adequate urine output, and also when slight oedema had collected to bring about its removal.

Science and practice of vaccination was in vogue in ancient India.

(Sir Bhagvatsinh and Dr. Huillet of Pondicherry)

COW & MANURE HEAP=COW-DUNG



Lieutenant Colonel Webb, the Director of Health to the Madras Government was induced to investigate into the properties of cow-dung on seeing immunity from sepsis in child labour in slums by the use of cow-dung as a floor smear and its use on boils etc. as poultice. To his great amazement, he could discover powerful bacteriophages (bacteria eating bacteria) that destroyed bacteria of cholera etc. so marvellously!

Dr. Asheshroff also supported this discovery of, phages. The "Indian Social Reformer" quoting Bacon's superstition of removing a superstition, suggested that the Indian practice of extensive use of urine and dung as house-cleansers though so sound, appeared as vulgar till modern science came to their aid!

Cow's urine and dung and the waters of the Ganges have proved their sanctity as purifiers owing to their 'phages. The practice of painting cowdung on the walls and floor of the houses and huts in Indian villages and towns has saved the dwellers from cold, damp and infections. Sprinkling dung water in the courtyard and kitchens in the Deccan is a daily practice and should have controlled the infection rate of tuberculosis etc. quite considerably as compared to her sister provinces.

Cow dung poultice on boils, wounds, sprain, giddies etc. is common in many parts of India. Charaka and Shushrit have praised and prescribed cowdung in Ayurvedic practice and the hakims have followed suit. Italy inoculates its waters with its 'phages when those waters are infected with the germs of cholera and dysentery. Prof. G. E. Weigand of Italy has discovered that the microbes of tuberculosis and malaria succumb to the smell of cowdung! It is now extensively used in its sanatoria! so also other countries of the Occident are learning the use thereof.

Dr. Macferson father of the Methodist Church, along with Dr. Tunnie Sahme were struck with the beautiful and healthful use of cowdung when they visited India in 1904. They printed articles in "The New York Times" and the

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American scientists were set to carry out research in the line. Dr. Fehlinger also visited India in 1921 and published his opinion in the Public de Hygiene of Munich. A retired civil surgeon from India wrote an article under the caption of 'Cow-dung Worshipper India' in the Medical Journal of Glasgow in 1924 and condemned the process. But Drs. Fehlinger, Macferson and Dr. Unan of Calcutta beautifully defended the practice. The Calcutta Session of the Tropical Medicine Congress in 1927 established the bacteriophagic properties of cowdung. It also declared that the Indian mothers in confinement are saved from Tetanus simply by the practice of dung flooring.

It is useful on burns and poisoning. Since 1931 the Health Departments in the Assam, Bengal, and Madras, have been able to check the spread of infection from cholera simply by the use of 'phages and dung.

Cowdung pasted with ghee or sweet oil is applied on the head in cases of epilepsy, fits, convulsion etc.

Cowdung contains Menthol, Ammonia, Phenol, Indol and Formehne. The very smell of these ingredients are potent enough to kill the bacili of T.B. etc and the phages therein devour all sorts of pathogenes. India like Italy should revive the practice of daily washing and smearing the floors, sick rooms and kitchens with cowdung in a solid or solution form.

CHAPTER XV

HIGH WATERMARKS IN WESTERN DAIRYING.

Main Features

Cattlewealth of U S A

Celebrities of the West

Mechanical Cow.

U. S A Dairy Statistics

Their Dairy Methods

Supplies of Lacto-Products.

Capacity vs. Efficiency

Study Tables.

Dairy Chronicle.



HIGH WATERMARKS IN WESTERN DAIRYING

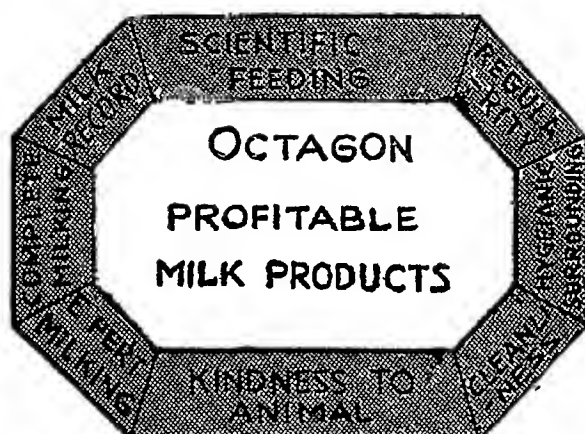
It has been said that no Nation, that was not a great consumer of Milk has ever become a world Power and also that our country (America) cannot maintain its present position as a world Power without the continued use of Milk? (Larson & Putney; Dairy Cattle Feeding and Management)

India was at its Zenith when it could enjoy its Milk and Honey; its Moral & Material Degradation today could be ascribed to its LACTO-STARVATION

The above truth is more applicable to India also because it has not to fall back upon its meat, fruit & other resources, as U. S. A & other Western countries.



HIGH WATERMARKS IN WESTERN DAIRYING



The West has made wonderful progress in Dairying and Dairyfarming by the aid of science and industry.

MAIN FEATURES

Cow-Testing Association.

Advanced Registry.

Bull-Breeding Association.

Register of Cattle Clubs.

The Herd Book.

Cow-Banquets.

Pedigree Records.

Boys' and Girls' Calf Clubs.

Co-operative Association.

Dairy Press.

Industrial Association.

Dairy Schools and Colleges.

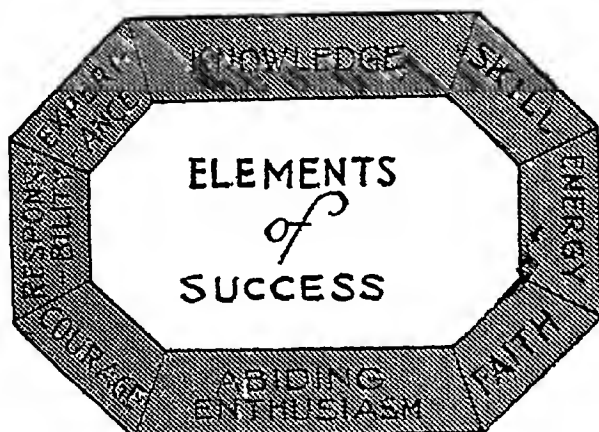
Experimental Stations.

Health Department.

The experts, inventors and dairy leaders direct the work of organisation, federation, production and distribution, and maintain optimum efficiency of the many thousands of mechanical devices invented, the following may be ranked as chief :—

Separator, churn, butter-worker, pasteuriser, homogeniser, sterilizer, bottle-washer, cutter, condenser, milking machine, Babcock tester (Butyrometer), Gerber Test Machine Lactometer, thermometer etc. etc.

CATTLE WEALTH OF U. S. A.



ELEMENTS OF SUCCESS

U. S. A. annually produces 7,900 million gallons of milk, 2,240 million lbs. of meat, 185 million dozen eggs, 567 million fowls and 160 million lbs. of honey which is only 1% of its total potentiality.

(Science of Eating—A. W. McCann)

In 1929 U. S. A. produced 10.5 billion lbs. of milk.

To understand the Full economic importance of Cattle Wealth let us study the figures of U. S. A. in order to get a thorough insight into our own problem in a comparative manner.

The great importance of Animal Husbandry in the U. S. A. is shown by the fact that on January 1st 1922, the horses, mules, cattle, sheep, and swine had a total value of about \$ 4,780,000,000.

In 1921 the cows of the U. S. A. produced 98,862,276,000 lbs. of milk at \$ 240,900,000 equal to more than one fourth of the value of all the Agricultural Products of the Country for 1921.

It means a production of \$ 21.9 for each person in the U. S. A. or more than double the per capita total income of an impoverished Indian—a human pigmy—a sad scrub!

In 1923, 25,000,000 cows converted forage crops into \$ 2,500,000,000 at the farm plus \$ 1,500,000,000.

U. S. A. produces 90,000 tons of honey per annum of the value of £ 2,000,000 (Rs 26,000,000). Domestic animals in U. S. A. produce manure containing Nitrogen, Phosphorus and Potash worth \$ 2,458,470,000 at the cheapest rate. It purchases 100 million dollars of fertilisers yearly. The transporting and handling of ordinary manure alone costs U. S. A. 30 million dollars, annually.

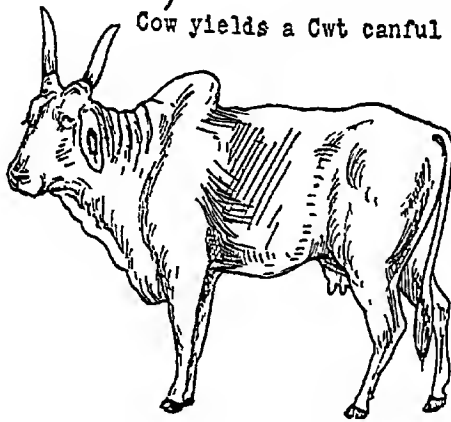
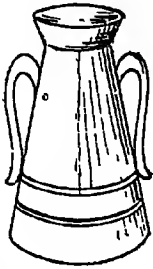
(Scientific American).



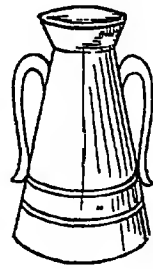
ANIMALS

WORLD RECORD

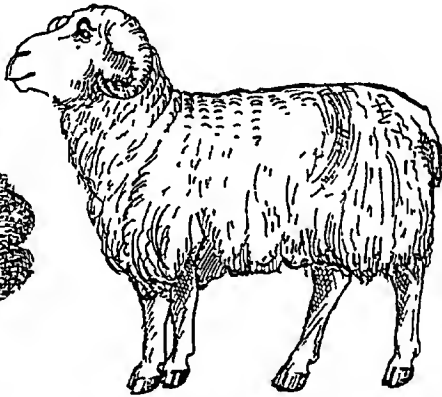
The Record



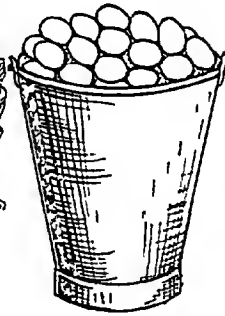
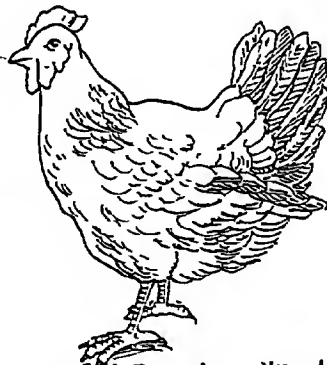
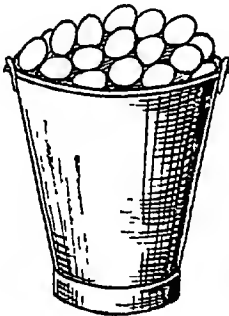
Cow yields a Cwt canful of milk a day



The Butter Record Cow yields 1800Lbs Butter Yrly.



The wool record Ram yields 35 Lbs of wool in a year.

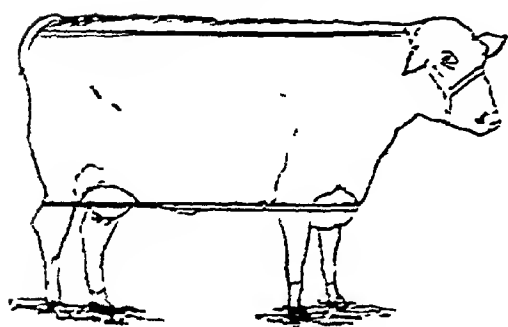


The record Hen has laid 354 Eggs in a Yr. 40 Lbs of eggs xx
equalling 7-8 times weight.

DMC

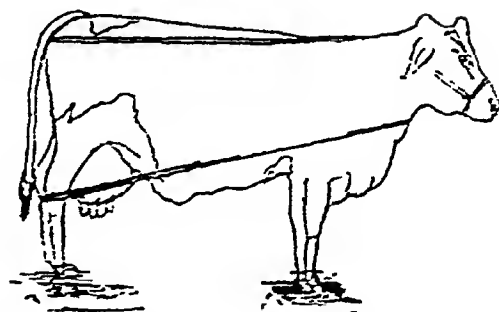
Physical Developments of Cows.

Fattener Cow



(Lump of Temperament)

A Milker Cow



(Nervous Temperament)

HIGH WATERMARKS IN WESTERN DAIRYING

There are more than 500 million cattle of the world including 100 million cows used for milk production. India alone has more than 30 million cows about one third of the World. Yet it is sadly **LACTOSTARVED**.

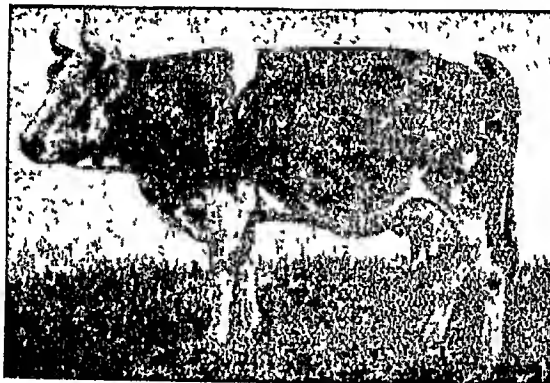
All the above cattle, after feeding the people in the home countries, yield more than 700 million lbs of butter, and cheese, and about 500 million lbs. of condensed milk while there are other millions of lbs of milk chocolate, lactose, casein and other milk products of immense quantities.

In U. S. A. the incidence of Lacto-Products-Consumption per capita is as follows: In 1925, 54.75 gallons of milk, 17.04 lbs of butter, 4.26 lbs. of cheese, 14.87 lbs of condensed and evaporated milk, 2.07 gallons of ice cream; or in other words each son of Uncle Sam—our Yankee Cousin could enjoy 1012 lbs. of milk luxuriance and milk luxuries ad lib. He had so to say enough and to spare. He exported lots of the Dairy Products.

(Pertle's History of the Dairy Industry of the World
and Henry and Morrison's Feeds and Feeding)

COW CELEBRITIES OF THE WEST

U. S. A. has 22% of its Cows as nine thousanders. Average yield is 45,000 lbs. yearly.



SEGIS PIETERTJE PROSPECT

Introduce the Blood of the World's Greatest Milk Producer into your Herd.

Calving at the age of 6 years, 8 months and five days Segis Pietertje Prospect went on test and produced 87,881.4 pounds of milk in a year.

Freshening at the age of 9 years, 3 months and 25 days she was again tested under official supervision, making 85,550 4 pounds

No cow of any breed or age has ever equalled her record for either one or two years' production

ROMANCE OF THE COW

Her son sired cow, Carnation Prospect Veeman, whose record of 36,859.4 pounds of milk in a year, completed in 1932, exceeds that of any *living* cow.

Segis Pietertje Prospect's brother, Segis Walker Matador, sired daughters with the highest average production (over 26,000 pounds of milk and 1,117 pounds of butter each) attained by the daughters of any bull.

His son, Matador Segis Ormsby, is the greatest living sire of producing daughters.

WORLD'S CHAMPION COW

2 35,625 lbs of milk and 1493 lbs of butter in 365 days—this is the record of Lady Pride Pontiac Lænwijkje, a Holstein cow of Minneapolis Minnesota. She has thus beaten all previous records for combined milk and butter production in the world. This cow is owned by Mr. Murphy, publisher of The Minneapolis Tribune and is the daughter of Lady Pride, one of the best two year-olds of her time with a record of 860 lbs. of butter and 20,825 lbs of milk. Her granddam K P. Lalth Clothilde was a world's champion in her own time with 1043 lbs. of butter and 22,229 lbs. of milk as a four-year-old. (Phillipine Agriculturist.)

3 "Heilo Bracelet Ormsby Matador, a Holstein Friesian Cow owned by The Carnation Milk Farms near Seattle, is the most beautiful cow in America."

This is interesting in view of the fact that this cow has produced over 25,000 pounds of milk containing over 1,000 pounds of butter in a year as a three-year-old.

Her brother, Matador Segis Ormsby, has the highest average production for his entire list of daughters of any living bull. His 15 daughters, tested under official supervision, average 1,050 pounds of butter and 25,000 pounds of milk each per year as three-year-olds.

His sire, Segis Walker Matador, has the highest average production for his daughters of any bull, living or dead, over 26,000 pounds of milk and 1,117 pounds of butter each per year.

4 At the Birthday Banquet of Mayflower—a celebrated cow in U. S. A. she was tastefully decorated and garlanded and festooned. All the three thousand visitors drank her health in great glee. The coffee was made of her milk.

5. Tilly Alcartra, the Holstein cow (5 years) which held the world's record for milk production weekly averaged 68 gallons of milk totalling 30,452 6 lbs 951 2 lbs. B. fat.

(Country Gentleman)

6 Duchess Skylark Ormsby (Hols.) at 5 years of age yielded 27,761.7 lbs. milk containing 1205.09 lbs butter fat.

HIGH WATERMARKS IN WESTERN DAIRYING

7. Murne Cowan (Gurnsay) at 8 years of age gave 24,008 lbs milk containing 1098 lbs B fat (Ohio)

8 Sophie 19th of Hood Farm (Jersey) at 7 years of age gave 17,557 lbs. milk and 999 lbs. fat. (Mass)

9. Lily of Willowmoor (Ayrshire) recorded 22,596 and 955 lbs. respectively (Wash.)

10 College Bravura (Brow Swiss) yielded 19,460 lbs and 798 lbs. respectively (Mich)

Just compare how low our cows have ebbed these days. A generality of them, to our great shame and sorrow, do not yield as much milk as their choice animals yield butter! However the results of the Military Dairy Farms and Government Farms and private enterprises show sure signs of some hope for India. They do tend towards slow and steady progress where science and conscience have combined.

A MECHANICAL COW

A Mechanical Cow that breathes, "Gives milk" and moves her head, eyes, ears and jaws in lifelike fashion —The most expensive cow in the world, a joint product of nature, art and invention, was "built" to demonstrate a milking machine at the "Century of Progress Exposition". First a pedigreed Holstein cow was secured as a model for the sculptor. After the cow had been modelled in clay, a plaster mould was made which served as a basis for a life-size papier mache model which was built up in layers so that the shell, made in six sections was three quarters of an inch thick. The pieces of the shell were dried for about four days and then assembled. Iron pipes in the legs of the model were inserted to support the motor platform which carries the "works". The model was then removed to the machine shop where various "surgical operations" were performed to permit movement of the head, jaws, eyes, ears, belly and tail. The mechanism was so cleverly designed by the constructors, Messmore and Damon, that only two motors were required, the plurality of motions being secured by an ingenious series of cams. The head sways, the eyes blink, the ears move lazily and the jaws go through the process of cud chewing all with little or no suggestion of mechanical means. Even the movement of breathing by expansion and contraction of the belly and flanks. The tail swings from side to side and at intervals gives a vicious switch. While the mechanism was being assembled, the cow herself was slaughtered and the hide carefully removed so that no seams would be visible when the model was covered. After the hide was dressed so that it would remain soft and pliable, it was applied to the model on which had been placed properly shaped sections of sponge rubber to build up "muscles" and to permit the moving parts to function in a natural manner. Where it was necessary further to conceal the joints of the hide, individual hairs were cemented to the seams with a solution of latex. On one side of the cow a "trap door" had to be provided so that the attendant can oil the machinery. A cut was

ROMANCE OF THE COW

made along the irregular edge of a large black spot on the hide so that the edge of the "trap door" is effectively concealed when the flap is down. Simulated milk is pumped from the base on which the model stands, through a pipe to the udder and thence through the teats and milking machine. Glass tubing in the delivery hose allows spectators to watch the flow of the "milk" through the machine.
(SCIENTIFIC AMERICAN, JUNE 1933)

U. S. A. DAIRY STATISTICS

In 1925 there were in America 777 cow-testing Assns. testing 3,27,688 cows giving 6% more milk and butter than an average unregistered cow.

225 Bull Associations. out of a record of 2,182 pure-breds and grades average milk yield and fat increments were respectively 377 and 19 lbs. Within a few decades the milk production record was raised from 10,000 lbs. to 37,381 lbs.

PROGRESS IN AVERAGE PRODUCTION PER COW

Year	Milk lbs.	Butter	Year	Milk	Butter
1850	1486	61	1918	3986	...
1860	1505	64	1920	3600	...
1870	1772	75	1919	3600	...
1880	2004	85	1920	3627	..
1890	2709	115	1921	3945	..
1900	3046	155	1922	4021	...
1910	3113	165	1923	4260	...
1917	3716	200	1924	4368	...

BUREAU OF CENSUS & AGRICULTURAL ECONOMICS

In 1902 the Gurnsey breed record cow gave 11,623 lbs. and in 1915 it rose to 24,008. This indicates an increase of 500 lbs. per year for the highest producer!

Governor of China a record Gurnsey bull bore 112 daughters in a year! The World Record cow the Prospect yielded 37,381 lbs. milk and 1159 lbs. butter in 1923.

A Red Polled cow remained fresh for 9 years (19th June 1890 to 30th September 1899). The total production was 50,593 lbs. and weighed 1881 lbs. when slaughtered.

HIGH WATERMARKS IN WESTERN DAIRYING

The Saanen goat has a record of 19 lbs. 5ozs of milk a day and has a record of 4005 lbs. in 302 days ! A Toggenburg doe holds a record of 4350 lbs. containing 188 lbs. fat in a year and the same goat in 15 months gave 5008 lbs. containing 161 lbs. B fat A good milk goat of both the breeds will average one to two thousand lbs. a year consuming $\frac{1}{6}$ to $\frac{1}{8}$ as much as a cow !

Pastures 1055 million acres of pasture land in 1919—55% of the total land area Although 3 million acres are annually decreasing therefrom, yet there will be 600 million acres left out any year which will be about as much as the total cultivable land of India.

Silage : 4 million acres of corn was harvested for silage in 1919 and 15 million acres for fodder The state of Wisconsin alone has more than 1,00,000 silos ! Soiling is hay cut fresh, silage is hay cured Experts have proved that green grass contains more protein and vitamins A and C than dry hay as shown by the milk produced There are about 100 kinds of grasses suited to cattle feeding. India deplores sadly in this case

Commercial Feeds. There were in 1920 more than 5000 factories making the feeds valued at 1000 million dollars, though not only big in size but seem to be rendering good service The total outturn was 7 million tons.

SELECTION, BREEDING, FEEDING, AND CARE.

The panacea for cattle regeneration in U S.A. was constituted of the above factors.

7 million cattle were tested for Tuberculosis till 1925 in 7 years, and reactors to the test fell from 4.9 to 3 1%

ASSOCIATION METHOD

By the Cow-testing Association method, the B. fat yield per cow was raised to 68 lbs. in 5 years as follows—237 ; 255 ; 278 ; 292, and 305 lbs. consecutively in 3 herds, and to 81 lbs. in another one, 234 , 244 ; 302 ; 315.

BULL ASSOCIATION

155 Dams averaged 7112 and 299 lbs. of milk and fat respectively. While their daughters by the services of the Bull Association gained by 18.5% and 14 6% by averaging 8071 and 342 lbs Among these daughters there were several ranging between 2 to 4 years of age when they could yield 70, 80 and 90 per cents of the mature production. India has none of these.

(J. C. McDowell)

ROMANCE OF THE COW

REFRIGERATOR CARS

In 1885 they were 660, and in 1905 the number mounted to 45,570. How high should it have gone by now? Indian Railways are sadly irresponsible and selfishly irresponsive in this matter. Indian Railways are the greatest hindrance in the development of the Dairy Destiny of the land. There are 400 patents issued for their improvements over there.

TANK CARS

Cars each, with 5800 gallons milk capacity, carry milk from Wisconsin to Florida.

ICE CREAM

One small ice cream concern in Baltimore had in storage in June, anticipating the 4th July rush, years ago 32,000 gallons of ice cream!

MODERN EQUIPMENTS

It is possible for one plant to turn out 1,00,000 lbs. of butter daily; pasteurise and bottle another 200,000 quarts of milk in 7 hours; to produce and put into storage 2,000 gallons of ice cream in a day's run and to evaporate and seal in airtight marketing cans 500,000 lbs. of milk in 10 hours—easy and economical.

BUTTER

Butter outturn rose from 29 million in 1879 to 181 million in 1889 and 421 million in 1899 and finally it sprang to one billion lbs. in 1921. The production of total butter was 1,953,300,000 lbs. in 1925.

CHEESE

Cheese from 15 million lbs. to 148 million lbs. in a score of years (1860 to 1881)! In the Chicago World Fair of 1893 Canada had exhibited a mammoth cheese cake of 22,600 lbs! France alone has about 250 varieties. India has none.

MILK BUDGET

Whole milk	46%	Cheese	4%
Butter	35%	Calf-feeding	3%
Wastage	8%	Other products	8%

HIGH WATERMARKS IN WESTERN DAIRYING

TOTAL ANNUAL PRODUCTIONS (IN THOUSANDS 1925)

Butter lbs.	Ice cream gallons	Cheese lbs	Powder lbs	Skim milk Powder lbs	Malted milk lbs.
19,53,300	3,22,729	4,47,514	8981	73,317	18,050
Lactose (Sugar)		Casein	Condensed milk	Total milk lbs	
56,55,000,		16,660,	17,57,858.	11,65,054,00,000	

TRANSPORTATION

The receipts of milk by the Railroad, Trams and Trucks at three stations in 1925 were as under —

New York	Boston	Philadelphia
39,70,99,000	8,36,45,000	5,48,07,000 gallons

Milk prices in the West are not as high as they are in the Indian cities to-day! Again the dairy products there, are generally strictly pure and scientifically handled. The dairy men are liable to punishment if their products falls below the Official Standards established by U. S. Department of Agriculture. Indian dairy stuffs are carelessly and unhygienically handled and tampered with, so that the diseases run rampant and the European and other fastidious people in India import dairy stuffs in the tune of two crores of rupees and our creameries have to pass their goods under fancy names.

LONDON MILK SUPPLY

The United Dairies Ltd. is one of the largest distributing firms and has a capital of 25 million dollars; employs 12000 people, maintains laboratories and a large corps of milk inspectors, while it manufactures its surplus into various kinds of Dairy products. It has 600 milk shops, and more than 100 factories and creameries. It daily handles 1000 tons milk making a million calls to deliver it.

The city of London alone consumes annually 92 million imperial gallons of milk mostly shipped by the railroads. England consumed 748 million lbs butter, 354 million lbs cheese, 264 million lbs. margarine, in 1918. (569 million lbs. margarine in 1918.)

The size of the butter market can hardly be realised but if it is stated that the market is open for 10 hours a day it will have to receive 1 ton of butter a minute to supply the demand. Most of the import is received in three London markets.

It had 21 itinerant Dairy Schools, 46,66,798 cows out of 1,20,07,000 cattle. The milk yield per cow was 5750 lbs. and the total yield 1350 million gallons in 1922.

ROMANCE OF THE COW

CANADA

Per head consumption was half a pint of milk per day, and 27 21 lbs. butter, 3 25 lbs. cheese yearly It had in 1924, 37,26,985 dairy cows which yielded in 1925, butter 280864000 lbs, cheese 1,68,069, condensed milk 7,72,80,000, milk powder 16,75,000 and skim milk powder 1,08,68,000

In a decade, Germany increased the milk yield by 1000 lbs per cow.

Every Swiss man consumed 20 lbs cheese, 11 1 lbs butter and 67 gallons whole milk in 1922. Every Swede consumed 69.7 gallons milk!

INDIA

An old report of the Director General of Commercial Intelligence in 1911 said that a reasonable estimate of the number of people using ghee as food would include about a quarter of the population, and that an average consumption of those using ghee was estimated at about 8 lbs per annum, averaging per capita 2.2 lbs. of butter consumption In case of army the daily ration was 2 oz aggregating 45 lbs of ghee or 54 lbs butter. Bombay consumes only 4.3, Poona 3 4, Sholapur 2, Ahmedabad 3.8, Surat 5 8 oz per capita per day of milk where it should otherwise have one pint if not a quart to start with

PER CAPITA ANNUAL CONSUMPTION OF MILK

INDIA 8.5 glns.

Finland	83.8	Switzerland	70.4	Sweden	69.7
Norway	56.0	America	55.3	Canada	51.0
Czechoslovakia	45.8	Austria	45.0	Netherlands	42.7
New Zealand	37.8	Australia	37.1	England	30.8
Germany	27.3	France	25.0	Denmark	22.0

CAPACITY VS. EFFICIENCY

Capacity is the power to hold—to consume, to absorb. Capacity is the power of intake, while efficiency is the power of output The power of production which may be technically known as the power of performance is what constitutes efficiency.

We rejoice at capacity having no idea of efficiency. This is a big national blunder. We should rather care for measuring and increasing efficiency in place of capacity. The tables subjoined would indicate how profitable it is to develop efficiency. Productivity and expenditure of an animal are no true criteria of its usefulness. It is only the net profitability that decides it.

A careful study of the tables shall reveal how profits could be secured by increasing efficiency of animals, how poor cattle become drag to the wheel of progress of the country, and how lucrative and responsive cattle turn out if right feeds and right treatment be meted out to right animals. Cull out the losers.

HIGH WATERMARKS IN WESTERN DAIRYING

YEAR'S RECORD OF A HERD TESTED BY KANSAS EXPERIMENT STATION Finest Lot (Profit)

Cow No.	lbs. milk	% fat	lb. fat	Cost of Feed	Value of Product	Value of Product overfeed	Cost of 1lb. of fat
1	9116	4.21	383 7	\$ 82 80	\$ 73 17	\$ 40 87	\$ 0 085
2	7015	4 43	310 8	30 61	58 72	28 11	0 098
3	8054	4 13	332 8	35 59	62 77	27.18	0 106
4	6504	4.59	289 5	29 26	54 57	25 41	0.101
5	6509	4.27	277 9	29 20	52 59	23 39	0.105
Average	7489	4 28	318 9	31 49	60 38	28 89	0 098

NEXT BEST LOT

6	5742	3 48	199 8	29 55	38 77	9 22	0.147
7	4772	3 92	187 0	27 25	35 52	8 27	0.145
8	3475	5.14	178 6	25 24	32.84	7 60	0.141
9	3913	4 14	161 9	27 27	30.18	3 41	0.168
10	4200	3 96	166 3	27 69	30 97	3 28	0.166
Average	4420	4 04	178 7	27 40	33 75	6 35	0 153

POOREST LOT

11	3583	3 79	135 7	26 75	26 22	—0 43	0 197
12	2903	4.13	119 9	22 89	22 02	—0 87	0.190
13	3730	4 23	157 8	31 22	29 36	—1 86	0.198
14	2141	4 74	101 5	24 43	18 18	—6 25	0.240
15	3089	4 06	128 7	26 32	23 94	—2 35	0.204
Average	3089	4 19	128 7	26 32	23 94	—2 82	0.206

[Ibid] 1 lb of butter equals 15 C

RESULTS OF 12 MONTH'S RECORD FOR 719 COWS IN THE SOUTHERN STATES

Items	Average of 719 Cows	Best Cow	Poorest Cow	Aver. of Best 10 Cows	Aver of Poorest 10 Cows	Av of Best 30 Cows	Av of Best 30 Cows
Milk produced lbs	4299 40	8325 50	1125 00	8681 90	1577 60	7326 00	2099 60
B Fat produced, lbs	216 84	588 79	64 12	459 00	77 21	391 75	100 70
Value of B fat at 28 ca lb	\$ 60 71	\$150 86	\$ 17 95	\$128 52	\$ 21 62	109 69	28 20
„ of S milk at 20 ca cwt	8 17	15 57	2 12	16 45	3 00	13 87	4 00
Total value of Products	68 88	166 43	20 07	144 97	24 62	123 56	32 20
Cost of feed per cow	36 27	72 03	23 80	65 73	24 63	54 83	27 36
Cost Producing 1 lb B Fat in cents	82 61	94 40	—3 73	79 24	—0 01	68 73	4 84
Returns for each \$ 1 invested in feed	16 70 ^c	13 40 ^c	37 10 ^c	14 30	31 90	14 00	27 20
Profit on each \$ 1 invested in feed	\$ 1 90	\$ 2 31	\$ 0 84	\$ 2 20	\$ 1 00	\$ 2 25	1 18
	90	1 81	—0 16	1 20	0 00	1 25	0 18
						(7 2)	

By the Representatives of the Dairy Division, U S Dept of Agriculture (25th Annual Report of the Bureau of Animal Industry U S Dept of Agriculture p 67)

Best individual produced nearly 8 times as much as the poorest The Best cow consumed feed worth \$ 3 00 for each \$ 1 00 expended for the poorest, but at the same time she gave a return of \$ 8 30 for each \$ 1.00 by the inferior animal

ROMANCE OF THE COW

COMPARISON OF THE 5 MOST PROFITABLE AND 5 LEAST PROFITABLE COWS FOR 5 YEARS

Year				Cost of food	Yield of fat in lb.	Profit
1899						
5 Most Profitable Cows	...			\$ 56 54	304 2	\$ 26.91
5 Least	"	"	...	52 02	188 6	—4.09
Difference ..				\$ 4 52	115 6	\$ 31.00
1900						
5 Most Profitable Cows	..			\$ 60 30	377.4	\$ 43 27
5 Least	"	"	.	45 38	164 4	—7.75
Difference .				\$ 14 92	213.0	\$ 49.02
1901						
5 Most Profitable Cows	..			\$ 53 24	375 3	\$ 44 25
5 Least	"	"	.	43 38	217.2	15 68
Difference ..				9.86	158.1	28.57
1902						
5 Most Profitable Cows	..			\$ 59 52	376 2	\$ 43 71
5 Least	"	"	...	51.45	236.6	13.71
Difference ..				\$ 8 07	139.6	\$ 30.00
1903						
5 Most Profitable Cows	...			\$ 59.46	365.5	\$ 40.23
5 Least	"	"	...	56 11	268 9	17.67
Difference...				\$ 3 35	96 6	\$ 22 56

Storr's Experiment Station Herd.

Average feed cost for the most profitable cows during 5 years was \$ 8.14 each per year more than the cost of feeding the least profitable ones

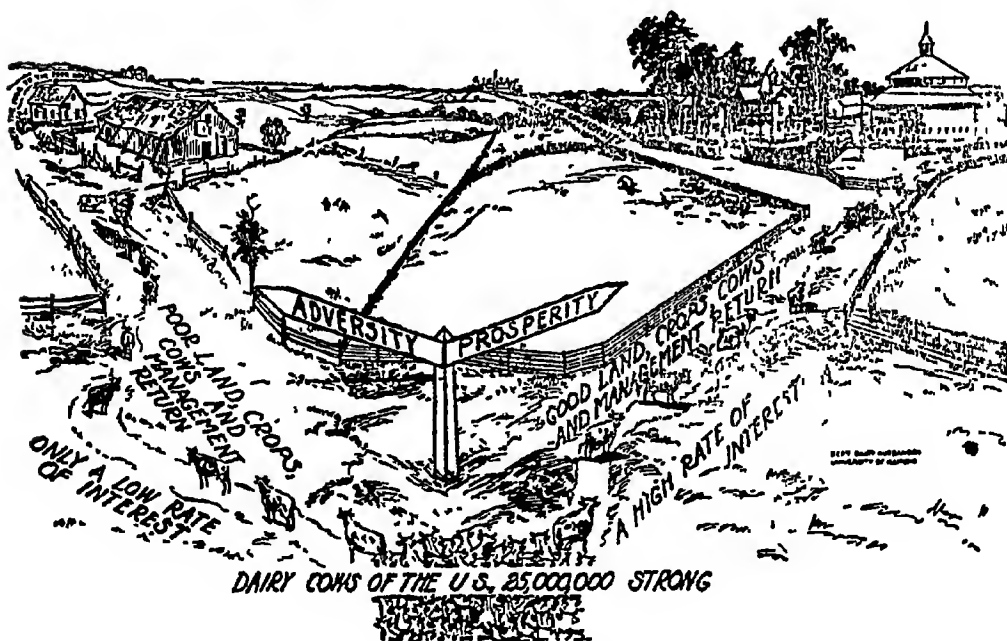
While the difference in the production averaged 144.5 lbs. of fat—in this case the additional fat produced by the least cows cost only 5 6 cents a lb.

HIGH WATERMARKS IN WESTERN DAIRYING

FROM 4 YEARS' RECORDS OF THE IOWA EXPT. STATION

Description of Cow	Lb of milk per yr	% fat	Lb of fat per yr	Cost of feed
Best Holstein	12111	3.81	461	\$ 29 88
Poorest „	6667	3 16	211	21 71
Difference	5444		250	\$ 8.12
Best Shorthorn	9869	4 12	406	\$ 27 38
Poorest „	3059	3 50	107	23.88
Difference	6810		299	\$ 3 55
Best Red Poll	7225	4 29	310	\$ 25.82
Poorest „	5249	3 85	202	25 24
Difference	1976		108	\$ 00.08
Best Jersey	6523	7 00	456	\$ 26 25
Poorest „	4087	4 94	202	18.54
Difference	2436		254	\$ 7.72

COW PATHS THAT LEAD FAR APART



AS THE DAIRYMAN GOES, SO GO HIS COWS

If the dairy farmer think things through financially he will see to it that he has productive soil, crops, and livestock managed economically so as to bring him a good rate of interest on his investment for a lifetime, as represented by the cows taking the right-hand path to prosperity. If he does not think things through at the start, the chances are that he will blunder all through life with nonproductive land, crops, and livestock, getting only a low rate of interest on the investment and keeping his family struggling along on the same low profit level, as represented by the cows taking the left-hand path to adversity.

ROMANCE OF THE COW

VARIATIONS IN EFFICIENCY AND CAPACITY OF 26 REGISTERED HOLSTEIN COWS UNDER THE SAME MANAGEMENT

Efficiency		Capacity		Productivity		Profitability	
Rank	Product per unit of feed	Rank	Value of feed Consumed	Rank	Value of Product per Cow	Rank	Value of Pro-cost of Feed
	\$		\$		\$		\$
1	2.46	1	99.83	1	246.10	1	146.27
2	2.40	16	86.42	5	207.76	4	121.84
3	2.38	7	91.05	3	210.52	3	125.47
4	2.34	5	94.05	2	220.01	2	125.96
5	2.28	4	94.06	4	214.87	5	120.81
6	2.13	18	86.06	6	183.53	6	97.47
7	2.09	20	84.20	10	176.39	7	92.19
8	2.06	14	86.70	8	178.56	8	91.86
9	2.05	13	86.75	9	178.11	9	91.36
10	1.93	15	86.59	13	166.70	12	80.11
11	1.91	11	88.52	12	169.20	11	80.68
12	1.91	6	94.01	7	179.25	10	85.24
13	1.82	17	86.23	15	157.20	14	7.097
14	1.76	3	98.98	11	174.64	13	7.571
15	1.74	26	82.69	20	143.61	18	60.92
16	1.73	25	82.94	22	143.18	19	60.24
17	1.72	12	87.08	18	150.02	16	62.99
18	1.72	9	89.07	16	153.51	15	64.44
19	1.72	21	88.52	21	143.61	20	60.09
20	1.69	23	83.10	23	140.46	22	57.86
21	1.69	9	89.16	17	150.68	17	61.52
22	1.65	24	83.01	24	136.60	24	53.59
23	1.63	8	89.32	19	145.41	13	56.09
24	1.60	22	82.22	25	131.35	25	49.13
25	1.58	2	99.74	14	157.28	11	51.54
26	1.44	19	84.77	26	122.22	26	37.45
Av.	1.91		88.46		168.72		80.26

HIGH WATERMARKS IN WESTERN DAIRYING

VARIATIONS IN EFFICIENCY AND CAPACITY

Efficiency		Capacity		Productivity		Profitability	
Rank	Product per \$ of outlay	Rank	Annual outlay	Rank	Total value of product	Rank	Residuam for farmer's effort
1	3 05	48	421	37	1285		864
2	2.84	33	982	8	2649	18	1717
3	2 63	47	434	41	1143	4	709
4	2 48	51	293	48	727	22	434
5	2 40	44	333	46	799	34	466
6	2.16	4	1683	1	3644	32	1461
7	2 13	16	1334	7	2844	1	1570
8	2 12	39	775	26	1646	6	871
9	2 11	29	1026	16	2165	16	1139
10	2 10	13	1379	6	2895	12	1516
11	2.10	32	961	18	2018	5	1057
12	2 09	1	1734	2	3619	13	1885
13	2 07	5	1675	3	3473	2	1798
14	2 05	21	1303	10	2472	3	1269
15	2 13	30	983	19	2000	8	1017
16	1 90	50	395	49	749	10	354
17	1 88	15	1344	9	2533	41	1189
18	1 86	6	1618	4	3016	7	1398
19	1 84	42	739	33	1361	26	622
20	1.83	37	881	27	1610	21	729
(THE POOREST 20)							
32	1 56	46	440	51	686	44	246
33	1 52	40	764	39	1162	37	398
34	1.52	22	1173	25	1776	27	605
35	1 48	7	1595	11	2358	20	763
36	1.47	27	1090	28	1602	31	572
37	1 47	31	978	31	1435	33	457
38	1 38	14	1358	23	1874	30	520
39	1 37	2	1703	12	2339	24	636
40	1 36	8	1595	17	2165	28	570
41	1.29	28	1018	36	1309	42	291
42	1 26	9	1505	21	1898	39	393
43	1 24	10	1492	24	1853	40	361
44	1 24	20	1211	30	1496	43	285
45	1.20	25	1103	35	1320	45	217
46	1 11	26	1095	38	1219	46	124
47	1.08	34	932	44	1009	48	77
48	1.07	14	1263	34	1348	47	85
49	1.02	41	742	47	754	49	17
50	0 88	38	804	50	173	50	91
51	.77	11	1469	42	1181	50	338
Av.	1.66		1079 8		7797.2		

ROMANCE OF THE COW

EFFICIENCY CAPACITY AND PRODUCTIVITY OF THE BEST AND THE POOREST

10 of the 398 cows in the Wisconsin Dairy Cow Competition 1909—1911

The most efficient 10 Cows

Efficiency		Capacity		Productivity		Profitability	
Rank	Product per unit feed	Rank	Consumed Value of feed	Rank	Value of product per cow	Rank	Value of product lost of feed
	\$		\$				
1	2.91	8	75.82	5	204.11	4	128.79
2	2.62	5	88.56	6	200.33	7	111.77
3	2.60	10	64.62	10	167.94	10	103.32
4	2.49	9	72.60	9	180.60	8	108.00
5	2.46	2	99.83	2	246.10	2	146.27
6	2.36	7	78.24	8	184.94	9	106.70
7	2.34	6	83.88	7	196.06	6	112.18
8	2.31	3	99.20	3	229.55	3	130.35
9	2.28	4	94.06	4	214.87	5	120.81
10	2.19	1	129.40	A	283.84	1	154.14
Av	2.38		88.57		210.83		122.26

The least Efficient 10 Cows

1	1.25	6	77.17	3	96.75	1	19.52
2	1.20	2	96.55	2	115.75	2	.
3	1.18	10	67.28	8	79.10	5	...
4	1.18	9	74.82	1.06	88.06	4	
5	1.13	1	103.69	1	117.95	3	
6	1.11	4	82.47	4	91.72	6	
7	1.10	7	75.22	7	82.66	7	..
8	1.06	3	84.85	5	90.26	8	
9	0.98	8	76.88	9	75.14	9	.
10	.92	5	80.28	10	74.16	10	..
Av.	1.11		81.87		91.10		

DAIRY CHRONICLE

The international chronological events that contributed tangibly towards building the Dairy Industry of the world shall interest the reader of comparative dairying.—

- 1800 Stall feeding introduced in Switzerland.
- 1820 Soiling of cattle by Josiah Quincy, U.S.A.
- 1827 First condensed milk by Apart, France.
- 1841 „ Milk transported by train by Selleck, U.S.A.
- 1851 „ Cheese factory in New York
- 1857 „ Ice cars by W.W. Chandler, U.S.A.

HIGH WATERMARKS IN WESTERN DAIRYING

- 1857 First Lactometer by Dr Muller, Switzerland.
- „ „ Lactobutyrometer by Merchand, Switzerland.
- 1866 „ Condensery by Page, Switzerland.
- 1864 „ Cooley or Swartz System, Sweden
- 1870 „ Thermometer by Segelcke, Denmark.
- 1873 „ Rennet extract for cheese, Hansen, Denmark
- „ „ Silo, Fred. Hatch, U. S. A
- 1874 „ Centrifuge, Lefeldt, Germany.
- 1875 „ Infant food, Henri Nestle, Switzerland.
- 1876 „ Milk Station annexed to school, Fleisipmann, Germany.
- 1878 „ Cream Separator, Dr. De laval, Sweden
- 1879 „ Friesian Herdbook established, Netherlands.
- 1882 „ Cooperative Creamery, Denmark
- 1883 „ Malted Milk, Wm. Horlick, U. S. A
- 1884 „ Bull Association founded, Denmark.
- 1885 „ Evaporated Milk Factory. U S. A.
- 1885 „ Milk trains in London twice a day, England
- 1886 „ Milk Delivery bottles, Thatcher, U. S. A
- „ „ Foot and Mouth Disease Prevalent, Germany
- 1888 „ Fat Tester by Dr. Gerber, Switzerland.
- „ „ Soxhlet's Sterilizer, Dr. Cailli, U. S. A
- 1889 „ Studying Milk Chemistry, Germany
- 1890 „ Babcock Test for Fats, U S A
- 1895 „ Pasteurizing Machines, U S A
- „ „ Cow Testing Association, Denmark
- 1898 „ Cold Curing of Cheese, U S. A
- 1899 „ Milk Drier (Roller Process), Sweden.
- 1900 „ Lur Brand Trade Mark for Butter, Denmark
- 1901 „ Milk Drying by Spray Process, U S A.
- 1902 „ Homogeniser, Gaulin, France
- 1905 „ Regenerative Pasteuriser, Millman, France.
- „ „ Sweet Cream Butter, U. S. A.
- „ „ National Dairy Show, U S. A.
- 1908 „ T B Free Accredited Herd, Maryland, U. S. A
- 1910 „ Feeding Sids by Savage, Eckles, Haecker and Morrison, U. S. A.
- 1911 Glass lined Vats
- 1915-20 Discovery of Vitamins, Dr McCollum,—U S. A and England
- 1923 World's Dairy Congress, U. S. A

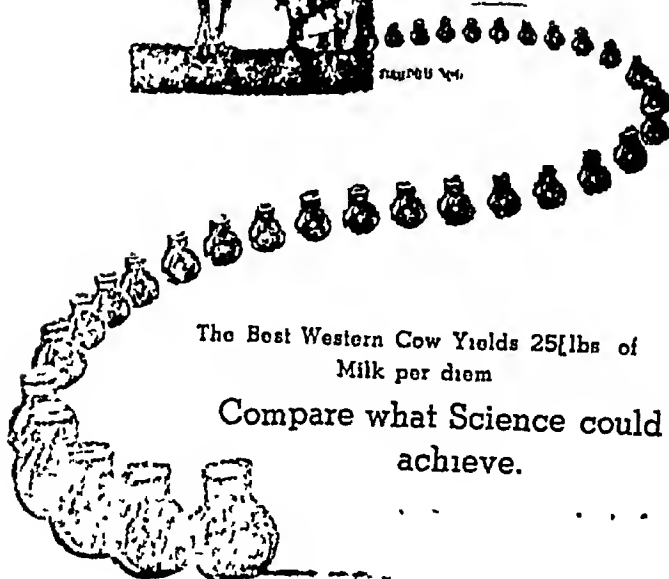
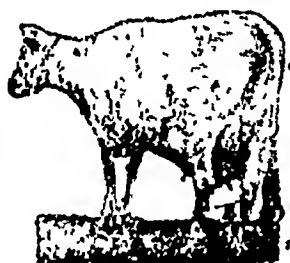
India has got to develop Modern Dairy practices on Indian lines as cheaply, as neatly and as hygienically as possible Dairy and Tannery combined shall emancipate cattle from their penitent position and the wretched scrubs shall be transformed into *Kamadherus*!



THE DIFFERENCE BETWEEN

The Best Gir Cow
Yields only 25 lbs
of Milk per diem!

OUR BEST & THEIR BEST



The Best Western Cow Yields 25[lbs of
Milk per diem

Compare what Science could
achieve.

CHAPTER XVI

COW vs. BUFFALO

Whom to Choose?

Buffalo-Keeping

Progressive Comparisons

Cow's Milk vs Buffalo's

Superiority of Cow's Fat

Superiority of Proteins



COW vs. BUFFALO

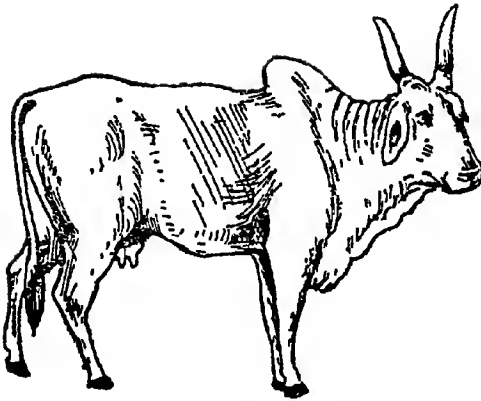
The buffalo—the Rank Enemy of the Cow
and therefore of the Indian peasantry.

No country in the world is so buffalo mad
as India! Only they are found in China
& Italy Use of the buffalo products betrays
bad taste and suicidal economy

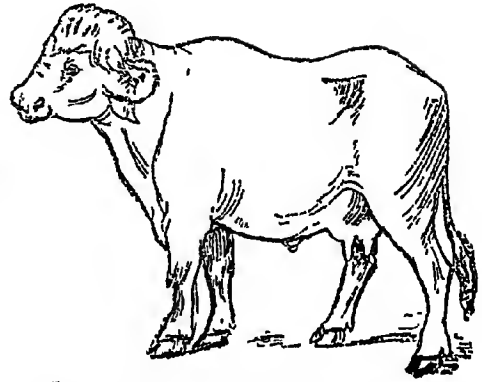
Further taking the whole life of a first
class cow of one of the Indian Milking
breeds, it is certain that this gives as much
or more fat or ghee as a buffalo For
although the milk of the cow is not as
rich, yet the animal calves more often
& are a shorter time dry In spite of
this, upto the present the buffalo has been
preferred as a Milk producing animal —Bruen
(Improvement of Cattle Breed in the
Bom Presy —B Bulletin 136)



COW vs. BUFFALO



Cow



Buffalo?

WHOM TO CHOOSE

1. Slender in size, Feeds $\frac{4}{7}$ th of the Buffalo

2. Feeding cost less

3. Puberty and Gestation earlier.

4. If bred to a Potent Pedigree Bull and fed well, both milk yield and oxen considerably improve. In a lactation they may yield up to 7-8 thousand lbs of milk; every generation may add 500 lbs to average yield of the National Herds. Potentialities so high; the possibilities look dismal.

5. Fat Percentage in Milk though less, yet total fat yield is more on the whole, if fully developed

6. Dries later, and calves earlier, feedcost during dry period lighter. Young stock of both sex productive and useful. Personally productive for a longer period. Regular breeding. All the offsprings productive, and of economic usefulness.

1. Massive; Feeds $\frac{7}{4}$ th of Cow.

2. Decidedly more than Cow; and proportionately less profitable for the same investment.

3. Both belated.

4. Potentialities not so high; nor so responsive to breeding and feeding as the cow.

5. Cannot increase milk yield, hence total fat yield less.

6. Abortions and miscarriages frequent; irregular in calving. Male stock useless, so more of *Himsa* and economic loss more telling in the long run. Only the female calves productive till the cow deposes her and assumes her own position.

ROMANCE OF THE COW

7 Lacto-products more luscious, healthful, richer in vitamins, and more vitahsing. (Vide cow's milk vs. buffalo's on pp. 180-181)

8 Young stock of both sex useful and productive

9 Supplies bullocks as Prop of Agriculture

10 Killing minimised, health, wealth and happiness secured Agri-cultural prosperity rests on cow, her progeny and products

11. Substantially helpful in the all round development of the country

12 A live monument of Cultural Unity Barometer of Prosperity

7. Milk heavy, less easy of digestion, not so soothing, poorer in vitamins and other enzymic values.

8 Only the female calf useful, but that cannot improve on her Dam, male ones useless and hence the buffalo less useful and profitable

9 Cannot withstand the rigors of the tropical climate, a hard job to live

10. Killing doublefold—of the male offsprings of both. It does not so substantially contribute to agricultural prosperity

11. Fatally hampers the growth of the Cow. It mars the fate of the cow and farmer, and consequently of the land at large

12 Ugly and unsightly animal only used in India for Ghee Craze.

Life in India is so slovenly and aimlessly individualistic to-day that we look to the apparent and not to the real National economy commands and demands of us to make a choice and be saved

COW has deteriorated but can be raised to her original Status by bringing her in the forefront, and allowing her rival the Buffalo to be shunted away for a while

COW demands as she deserves a bounty from us. To give this is right real *Jeevdaya* All else is a phantom of it Don't ease your conscience by slipshod methods and other makebelieves

Face the reality, and act out your part from national and communal viewpoint and not an individualistic or communalistic bias Save the Cow through Religion, Reason and Science

COW vs. BUFFALO

" BUFFALO-KEEPING "

Income & Expenditure

Rs.	a.	p.	
207	0	0	Milk for first 6 months. 8 lbs. per milking at As. 0-1-6 a lb.
34	0	0	Milk during 7th - 8th months 8 lbs. per milking at As 1/6 a lb.
20	0	0	Manure 10 cart loads Rs. 2/- per cart load.

324 0 0

Rs.	a.	p.	
255	0	0	Ghee 6 mds. if sold at Rs 42/8 a md.
42	0	0	Ghee (for home consump- tion)
50	0	0	Manure

347 0 0

Rs.	a.	p.	
120	0	0	Grass and hay (Rs. 10/ a month) per year.
64	0	0	Concentrates such as cotton seed, bajri etc. at Rs. 8/- a month till in milk.

184 0 0

34 0 0 Interest and depreciation.

218 0 0

106 0 0 Net profit.

324 0 0

Chunilal Shelat.

Rs.	a.	p.	
28	0	0	Kadbi, straw (from home)
112	8	0	Cotton seed 75 mds. at Re. 1/8 a md.
24	12	0	Guvar.
8	0	0	Methi
6	0	0	Tal.
10	0	0	Tonic at delivery time.

189 4 0

34 0 0 Interest and depreciation

223 4 0

123 12 0 Net profit.

347 0 0

Mahadeobhai Desai in Bardoli Satyagrahno Itihas.

ROMANCE OF THE COW

PROGRESSIVE COMPARISONS

The Cow has future, not the Buffalo.

Number of Cows		Milk yield lbs.	Number of Buffaloes	
1912-18	1924-25		1912-18	1924-25
...	1	Above 10,000	—	—
...	4	9000—10,000	—	—
..	80	8000—9000	1	—
5	35	7000—8000	2	—
4	81	6000—7000	10	25
19	158	5000—6000	15	95
65	280	4000—5000	102	259
248	375	3000—4000	276	386
586	310	2000—3000	502	219
708	140	1000—2000	549	76
549	98	1000	310	48

Director of Farms, Master General of Supplies Branch (Evidence before
the Royal Commission on Agriculture in India Vol. I.)

POONA AGRICULTURAL COLLEGE DAIRY EXPERIMENTS

Kind of Animals	No.	Total Annual Milk Yield		Total No. of days in milk	Average Daily Yield of milk per head.	
		lbs.	oz		lbs.	oz.
Cows ..	30	55,321	12	7,109	7	12.3
She Buffaloes	49	118,844	4	16,564	7	2.7

Only make a little departure with a bold stroke of imagination, by way of also using cow's ghee exclusively in place of buffalo's, and you stop slaughter of he-buffaloes and calves, and innocents, and lastly the ruination of the whole nation-economical, agricultural and nutritional.

COW'S MILK VERSUS BUFFALO'S

Lesson of Laboratory Experiments

Scientific experiments in the laboratory and actual dietetic experimentation and experience in the laboratory of the human system combine to prove concurrently the superiority of cow's milk over that of the buffalo in the following respects.—

1. Milk is indispensable for its perfect proteins. In cow's milk, these are easier of digestion, being softer than those in buffalo's milk.

COW vs BUFFALO

2. Fat, in order to digest the protein, is in sufficient quantity in cow's milk, and is hence more helpful to children and invalids in particular and adults in general. Buffalo's milk-fat is rather of a quality and quantity that may not warrant its being preferred to cow's milk-fat. Butyrin and other softer fats, out of about a dozen to a score of fats that constitute milk-fat, are in larger amounts in cow's milk. It becomes easily emulsified in the system, and not so much of saponification takes place as in the case of buffalo's milk-fat, and hence no such wastage in the form of soap in faeces, nor sapping of the alkaline salts of the system at the cost of liver bile and its functioning. The intestinal troubles accruing from sluggish liver find their source of mischief in tough fat and the like. The soft fat of cow's milk is, therefore to be preferred. The vitamin contents in cow's milk are decidedly greater than in the buffalo's for the reason that vitamin concentration is proved to be in the fluid parts of fats that predominate in cow's milk.

3. Cow's milk-fat is the richest source of vitamins under the sun. Vitamin "A" for fluidity, and 'B' and 'D' for heliopathic and chromopathic action of the sun, through the soft and coloured skin in the cow, are to be found in larger amounts in the cow's than in buffalo's milk. The synthesizing property of the cow puts her in the ascendance in the manufacture and storage of vitamins.

4. Enzymes like oxides, reductase, etc. which besides helping digestion promote the elimination of poisons known as toxins and ptomaines in the system of the consumer are more abundant and suitable in the cow's natural raw milk than in that of the buffalo. The glandular system, which governs the vitality, vigour and pigmentation of man, is greatly helped by these milk enzymes. Hence cow's milk is a positive factor in the cure of leprosy, phthisis, etc.

5. Salts in cow's milk are also in a more soluble and assimilable form than in buffalo's milk. These salts, besides being themselves directly useful help the digestion and assimilation of fat proteins.

6. *Lactococcus bacillus* multiplies more freely in cow's milk than in buffalo's. The proof of this fact lies in the easier and quicker curdling of cow's milk.

7. The calorific value in buffalo's milk being higher it heats the body more than cow's milk. Cow's milk will be found to be soothing and at the same time nourishing. It has, therefore, a great value for intellectual workers.

8. The nutritional ratio of cow's milk is decidedly narrower than that of buffalo's milk, and hence the real nourishing power of cow's milk is greater than that of buffalo's.

9. Milk as an emulsion, in the natural state in which it is obtained, is more suitable in the case of cow than that of the buffalo, as the fat globules, being smaller and more numerous with the proteins hidden in them, render cow's milk-fat and cow's milk proteins easier and lighter of digestion.

D. Jani. B. Ag. (Bom.) in Haryan.

SUPERIORITY OF BUTTER FAT

As is well-known, lecithin, a derivative of glycerids containing nitrogen and phosphorus is especially found in the brain and in the nerves. Food containing lecithin, for example soyabean and some other leguminous beans, for the vegetarians should be valuable for the brain-worker. From this point of view, milk is very valuable food because it contains all the necessary ingredients both for the invalids as well as for the adults, particularly so for the former.

SUPERIORITY OF COW'S MILK

Professor Dr. N. N. Godbole's and Sadgopal's conclusions were as follows:

I. From the point of view of the contents of carbo-hydrates, fat, albuminoids, salts and vitamins, milk especially of the mother, ass and cow form an ideal food both for adults and children.

II. Of the two milks, of the cow and buffalo, the cow's is more easily digestible by the human system and hence more nourishing.

III. From the medicinal point of view, also, the milk from the cow and the goat are excellent.

SUPERIORITY OF COW'S GHEE

Professor Dr. N. N. Godbole's and Sadgopal's conclusions based on all the material at their disposal were as follows:—

1 Cow's butter fat is known to have iodine in its composition whereas no data is available on this point in the case of buffalo butter fat.

2 Both cow's butterfat and buffalo's-butterfat contain vitamin A and D but cow's butterfat is richer in the vitamin A while the other is richer in vitamin D

3 Butterfat as such is any time better than tallow, lard or vegetable ghee

4 Cow's butterfat is richer than the buffalo's-butterfat in the total assimilable and digestible part and is therefore, comparatively more suitable for children and weaklings

5 From an economic point of view, the buffalo is a better butter-producing machine than the cow. We are of opinion that it is worthwhile trying experiments in India on oils like Sesam, coconut etc. which are rich assimilables but poor in vitamins

COW vs BUFFALO

Of the two butterfats, cow's is nearer to the composition of human body fat than the buffalo-butterfat.

	Saponi- fication value	Iodine value	Reichert Meissl value	Polenske value	Kirsch- ner value	Refractive index 60 N D
Murrah buffaloes'						
ghee . .	252.3	32.5	28.0	1.4	24.6	1.4467
Pasture fed buffaloes'						
ghee .	251.0	33.5	30.9	2.2	25.6	1.4462
Cross-bred cows'						
ghee .	252.0	35.2	25.2	1.4	20.9	1.4475
Pasture-bred cows'						
ghee ..	249.2	36.0	26.0	1.9	20.6	1.4470

	Moisture- per centage	Refrac- tive index at 40°C Butyro- refracto- meter reading	Reichert Meissl value	Polenske value	Kirsch- ner value	Saponifi- cation value	Iodine value	Held value
Kangiam cows	0.2	43.5	25.5	1.5	24.9	223.7	36.8	0.56
Sonchori cows	0.1	44.4	20.1	1.4	17.0	221.7	35.3	0.08
Tharparkar cows	0.1	45.1	26.6	2.2	21.7	223.8	36.5	1.10
Hariana cows	0.1	43.8	26.0	1.5	21.6	224.0	36.0	0.98
Konkrej cows	0.2	43.5	26.1	2.0	21.5	230.0	34.2	0.72
Dhanni cows	0.1	43.5	26.5	2.3	21.8	225.1	35.9	1.40
Assamese cows	0.1	44.0	22.6	1.3	19.4	223.4	36.5	1.00
Ayrshire cows	0.1	43.5	25.7	1.8	22.6	220.4	37.9	0.72
Nagpuri buffaloes	0.1	45.1	31.0	1.0	28.6	229.0	33.6	0.44
Surati-buffaloes	0.1	44.0	31.7	1.1	28.9	230.6	33.6	0.56

VITAMIN VALUES

			Acid value	Refractive index at 40° C	Yellow value carotin Y. R		Blue value B. Y. R.		
Goats'	ghee	...	0.38	1.4531	1.2		1.4	0.2	0.2
Buffaloes'	ghee		1.10	1.4540	1.5	0.9	1.3	0.0	0.3
Half-bred cow's	"	..	0.56	1.4545	5.6	1.6	1.4	0.6	0.6
Sindi cow's	"	..	0.56	1.4548	5.6	2.0	1.4	0.8	0.6
Gir cow's	"	..	0.75	1.4548	5.2	2.4	1.2	0.8	0.8
Ayrshire Cow's	"	..	0.56	1.4548	6.0		1.3	0.6	0.6

Journal of Indian Agriculture.

ROMANCE OF THE COW

COW CASEIN vs. BUFFALO CASEIN

	Buffalo casein per cent	Cow casein	
		Van Slyke and Bosworth per cent.	Lechmann and Hempel per cent.
Carbon ...	55.09	53.5	54
Hydrogen ...	7.36	7.13	7.04
Nitrogen ..	15.67	15.80	15.06
Sulphur .	0.71	0.72	0.771
Phosphorus .	0.72	0.71	0.847
Oxygen (by difference)	20.48	22.08	22.28

	Buffalo casein	Cow casein	
	Nitrogen per cent.	Nitrogen percent obtained by Dunn and Lewis	Nitrogen percent obtained by G. S. Mehargbe
Amid Nitrogen .	1.684	10.490	10.24
Hummin .	5.982	2.130	1.32
Arginine .	8.688	7.420	7.990
Histidine	5.211	6.010	8.040
Lysine .	7.164	0.090	9.310
Cystine ..	—	0.480	0.150
Amino nitrogen in the filtration ...	59.180	58.780	57.280
Non-amino nitrogen ...	18.910	5.980	8.460

Findings in the Buffalo Casein :—

1. Amid nitrogen is extremely low when compared with that in hydrolytic products of cow casein.
2. Hummin is much higher than that in cow casein.
3. Corresponding to the decrease in the amid nitrogen, there is an increase in the non-amino nitrogen.
4. The quantity of cystine is negligible in buffalo casein.
5. Arginine, hystidine and lysine and amino nitrogen in the filtrate of the monoamino acids are practically the same as those in similar experiments on cow casein.

Professor Sahasrabuddhe in the Journal of Indian Agriculture.

COW vs. BUFFALO

SUSCEPTIBILITIES

The buffalo is found to be more liable to infectious diseases like tuberculosis than cows in India. This is a patent fact that supremely goes in favour of the cow. Cow's lacto-products are super-eminent healthful without an iota of doubt. The buffalo products sink into insignificance before those of the cow.

It is interesting to compare the figures obtained for the digestion of buffalo casein with those obtained by other workers for cow casein.

Enzyme	Buffalo casein		English Cow casein (Dunn and Lewis)	
	Hours	Per cent. amino-nitrogen	Hours	Per cent. amino-nitrogen
Pepsin ...	26	8.6	14.5	9.6
" ...	54	5.42	38.5	11.1
" ...	96	6.46	86.5	11.7
" ...	110	6.46	110.5	11.8

Trypsin added at the end of 110 hours :—

Enzyme	Buffalo casein		English cow casein (Dunn and Lewis)	
	Hours	Per cent. amino-nitrogen	Hours	Per cent. amino-nitrogen
Trypsin ...	184	23.55	122.5	53.2
" ...	160	27.95	146.5	68.8
" ...	182	29.80	170.5	79.9
" ...	230	30.21	242.5	78.7

Trypsin alone

Enzyme	Buffalo casein		English Cow casein (Dunn and Lewis)	
	Hours	Per cent. amino-nitrogen	Hours	Per cent. amino-nitrogen
Trypsin ...	48	19.15	22.5	41.3
" ...	72	19.16	45	50.4
" ...	120	22.99	68.5	52.7
" ...	144	22.99	92.5	52.4

The buffalo casein is more difficult for enzymetic digestion than the casein obtained from the English cow.

ROMANCE OF THE COW

The buffalo casein is more difficult to digest than the cow casein.

In its ultimate analysis buffalo casein differs from the English cow casein in two respects. Firstly, the carbon percentage is higher and secondly the nitrogen percentage is lower.

The buffalo casein is digested only to about half the extent to which the cow casein is digested by pepsin alone, by pepsin super-imposed by trypsin and by trypsin alone

CHAPTER XVII

TOWARDS COW REGENERATION

Living Factories

Italy's Way.

Bull Purity Pays.

Bull is half the herd

Yearly difference of Rs 5,000

Comparisons

Economics of a stud bull in India

Bad vs good bulls

Cow. Modus Regeneri

Individuality.

Test is best.

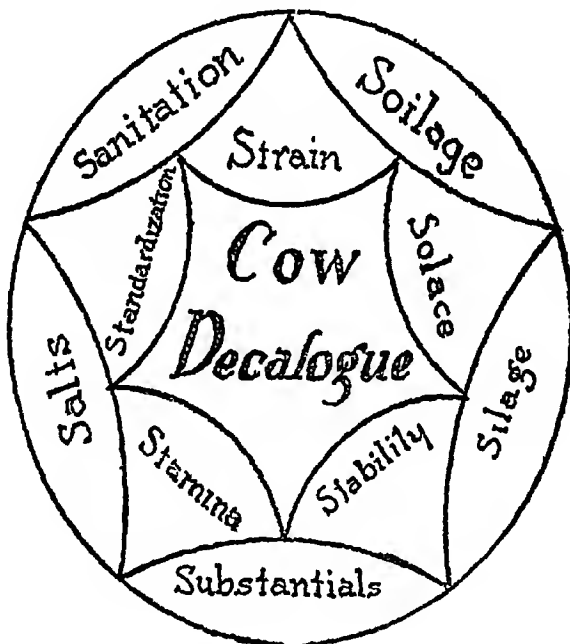
Milkers vs. Fatteners

Experiments on Sahiwals.

Pest-free cattle means money.



TOWARDS COW REGENERATION



Thus Testing Pays Wonderfully. Forget not that All that Glitters is not Gold Never take things by their face value, for appearances are often deceptive Many Scrubs-Miserable in looks and Poor in Performance have improved, responded marvelously proved to be more Profitable.

NOT PRODUCTIVITY BUT PROFITABILITY IS THE TRUE CRITERION OF MEASUREMENT OF PROGRESS.

Test of the cow is the Test reliable; all Tests are misleading.

All the Western Countries build beautiful herds of cattle & made progressive improvements, generation after generation, simply by means of Cow Testing Association, Breeding Bulls, Calf Clubs & Many other Means & Ways.

NOTHING PAYS AS SCIENCE: & NONE RESPONDS SO SPLENDIDLY AS COW.

TOWARDS COW REGENERATION

LIVING FACTORIES

The animals of the farm should be regarded as Living Factories that are continuously converting their feed into products useful to man. A fact of great economic importance is, that a large part of the food they consume is of such a character that humans cannot directly utilise it themselves.

Another product of greater aggregate money value than any one of these (i. e. food e. g. milk) is the work performed by horses and other draft animals. In exclusive grain farming the large amount of roughage, rest as straw and corn storer, which results as a by-product in the growing of cash crops, is not utilised in most instances. Such materials are merely in the way and are disposed of in the easiest manner often by burning, without regard for the loss of vegetable matter, so much needed by the soil.

In a well planned system of stock husbandry, all these materials are utilised for feed or bedding. Much forage which cannot be consumed by humans, and would otherwise be wasted, is thus refined through the agency of animals, and converted into a form suitable for the nourishment of man, while a considerable part of the organic matter is returned to the fields in the resulting manure. Immense amounts of by-products result from the manufacture of the cereals and other seeds into flour, breakfast foods, oils etc. Although not suited for humans, some of these by-products are among our most valued feeds for stock. As the density of the population increases and the prices of food stuffs advance, the feed supplied to our farm animals must, to an ever-increasing extent, consist of substances resulting secondarily from the making of human food, whether they be coarse roughages or milking by-products.

Feeds and Feeding by *Henny and Morrison.*

ITALY'S WAY

The Italian peasant lives in a joint family with his brothers like the Indian and is much attached to his brother, and will greatly lament if his brother dies, but far more if his ox dies. Such is the high estimation of cattle in a country where the bullock is the mainstay of the house though the cow is no object of religious veneration. Let the Indian visitor to Italy learn to appreciate the following of the Italian ryot towards the pious ox whom the mild Vugli loved and he will come back to India and found a Cattle Protection Society, no longer to save the Hindu Sacred Cow from the Muhammadan butcher, but to protect all cattle against the heartless neglect and unconscious cruelty of the East.

It is no wonder that the Lombard ploughing bullock is a sleek, well fed animal four times the weight of the Little Starved Abortions used in India, and the average Lombard cow yields, I am afraid to say how many times as much milk of better quality than the Indian

ROMANCE OF THE COW

Where the cow is a valuable possession, she is tended with care and love, and crops are grown for her and palaces are built for her. Here she is merely an object of veneration, she is left to stand and starve in the public standing and starving grounds which are mis-called grazing grounds in India! India should abolish these places of torture and breeding grounds of disease and abortion, and every Indian should devote three-fifths or two-thirds of his land to growing grass and fodder for his cattle.

I assure him he will not be a loser. Apart from the fact that the milk crop, at any rate near large centres of population, is more valuable than the paddy-crop and better food, rotated and manured paddy (or any crop) will yield him two or three times as much as the unrotated and unmanured.

Mr. A. Gallie in Young India, 13th May 1926.

BULL IS HALF THE HERD : SEE THE DIFFERENCE

The Prayagi was a good Pedigreed Bull. It procreated 11 daughters out of which 9 excelled their Mothers.

While Himmat was not a good bull, and the result was that out of its 10 daughters 9 receded.

Prayagi's son Thakur turned out an exceptionally prepotent Sire, and its heifers yielded 5000 lbs. of Milk in the First Lactation.

Experiment on The Pusa Farm (Agricultural Journal of India.)

In an Experiment recorded on the Poona Agricultural College Farm, the following were the results that will interest the readers :—

A good bull served 11 cows, and procreated 11 daughters, of them 2 receded their dams by—185, and—880 lbs. The rest excelled their dams by 5 ; 223 ; 234 ; 593 ; 2013 ; 965 ; 4800 , 1368 ; 1485 lbs. respectively. A bad bull procreated 10 daughters out of which only 2 excelled, while the rest 8 receded their dams as follows :—

62, 429 lbs more production; and—1618;—3025,—3580;—4581;—1795 —1253,—2196,—3248 lbs. respectively.

The total difference in money value is that a good bull brings in an additional gain of \$ 1,600 (The cow, the Mother of Prosperity) Under Indian conditions, though the difference in money value may not be so startling, yet the improvement secured is incalculably fine.

TOWARDS COW REGENERATION

What our country sadly and badly wants to-day is the re-establishment of the Institution of the **STUD BULL**, by castrating all the stray bulls that are continuously prostituting and therethrough debasing our native herds. Pure bulls will improve by line-breeding

YEARLY DIFFERENCE OF Rs. 5000

One cannot believe what a world of difference there exists between a good bull and a bad bull! Let us study the American figures —

There were two herds one sired by a good bull A and the other by a bad bull B valued respectively at \$ 150 and \$ 25, and the results in 3 years of 33 descendants were as under.—

	Dollars
1. 8—3 years old cows by A each producing 2000 lbs. more milk than their dams. 16,000 lbs. of extra milk at \$ 2 per cwt. ..	320
2. 8—3 years old cows by B each producing 1000 lbs less milk than their dams. ...	160
3. 8 cows were worth \$ 50 more each than corresponding .	400
4. 8—2 years old cows were worth \$ 35 more each in herd 2.	280
5. 8 good yearlings \$ 25 more each in herd 2 ..	200
6. 3 yearlings from 8—3 years old cows more each in herd 2. ..	75
7. 6 heifer calves of 2nd generation \$15 more in herd 2. .	90
8. Bull A \$250 and \$50 difference in original prices	75
Total Difference in one year	\$ 1600 !

Haynes—Cow, the Mother of Prosperity

In another experiment in the Purdue University (Indiana) a proven bull served the Hol. Fres. Herd effecting an increment of 3085 lbs. milk and 118 lbs. fat per year per cow!

Mr. Hugh Van Pelt selected a scrub cow for the Iowa Experiment Station to show how good bulls and good feed will improve.

ROMANCE OF THE COW

		Milk	Butter
Original cow	...	8,875	198
Improved daughter	...	6,956	266
Improved Grand daughter	...	12,804	488

Just compare the tremendous differences in good breeding only within two generations of the cow.

COMPARISON OF BULLS

	Dam:		Daughter		Difference lbs
	Milk	Butter	Milk	Butter	
Bad bull (Missouric Rioter) . .	5380	234	4881	216	—1009—18
Cheap, unpedigreed Hugorotus ...	4969	231	4576	245	— 893 + 14
Lorne of Meridale Pedigreed ...	4559	221	5969	287	—1410 + 66
Miss. Rio. 3rd. ...	4775	238	8005	384	—3230 + 46
Pedro (ordinary) .	5321	268	5376	271	Insignificant
Brown Bessie . .	6029	293	4295	217	—1734—76.

30 daughters of Lorne for 6 years increasing 2,50,000 lbs over their dams worth \$3750 at \$1 50 per cwt. An equal number of daughters of Rioter would have fallen 180000 lbs, behind their dams in the same time. Lorne's daughter's yield would exceed the income from the latter by \$6467 in 6 years. 1000 dollars annual difference and 33 per head per year.

ECONOMICS OF A STUD BULL IN INDIA

A pedigreed bull of Rs. 500 producing 15 to 18 calves yearly has 7 to 8 daughters. At their third year, 4 or 5 of them will daily give a lb. milk more than their half sisters. If the lactation period be taken 280 days then those five daughters will yield 1400 lbs. more milk annually. Taking milk at 8 lbs. per Re they will give net Rs 175 or Rs. 85 per head per year more profit over that of the step sisters, simply by the service of the good sire!

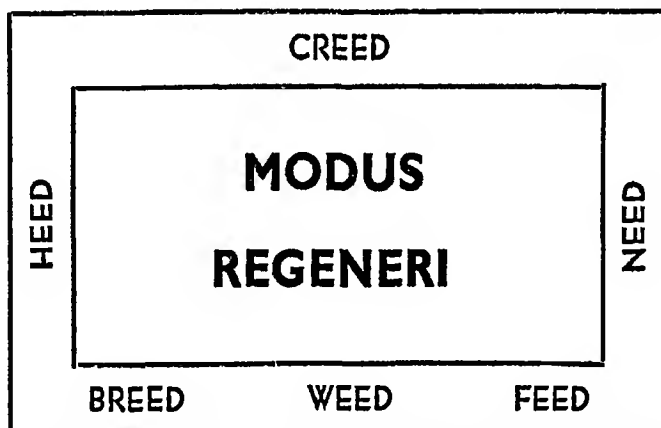
In 6 years each animal in 6 lactations will add Rs. 210. Thus 30 cows in 6 years will fetch Rs. 6300 additional milk income due to the bull. Rs. 300 per year more from new bulls got up from him will add Rs. 1800. Thus the total additional value of Rs. 8100 will be had against an invest of Rs. 500.

TOWARDS COW REGENERATION

GOOD BULL vs. BAD BULL

Dam:	Milk Yield in a lactation	Good Bull		Bad Bull	
		Daughter:	Milk Yield	Daughter:	Milk Yield
Chandy	3346	Rumal	3695	Draupadi	2388
Ratha	3114	Rukhmi	3341	Sarji	1545
Maina	3023	Paithan	3263	Girji	3138
		Yamuna	3798	Bandi	2923
Harni	2915	Chandrabhaga	3657	Bhivri	2277
Tulja	2194	Subhadra	1716		
Sakhoo	1283		1316	Saraswati	2342
Ganga	2695	Kitty	for 98 days 4050	Triveni	1851
Narbuda	2188	Mary	1446		
Lakhi	3840	Evyline	for 119 days		
Sundar	1370	Dorris	3743		
Bandi	2923				
Lanka	1676	Victoria	3812		

Nagpur College Dairy.



The mode of regeneration consists of the following points:-

WEED out the weak and wicked, all scrubs and mongrels to be ruthlessly culled out.

BREED with the potent and progressive studbulls. (castrate the rest)

FEED looking to the milk pail not the size; respect efficiency not mere capacity, it is the profitability that counts not productivity.

CREED should be based on National and Rational policy.

NEED of the Nation; nutrition, economy and culture.

HEED by the Rearing science of animals ministering to their health and crude comfort.

ROMANCE OF THE COW

INDIVIDUALITY OF THE COW

Ordinary cow (200 lbs fat per year.) 50 to 60% maintenance Ration.

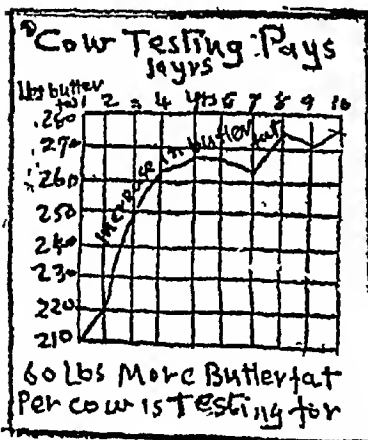
Better	"	"	40 to 50%	"	"
Extraordinary,	"	"	35%	"	"

As the quality of animal improves, more of the ration is utilised in performance and less in maintenance.

In the Iowa Experiment Station the cow No. 27, produced 8 522 lbs. milk and 469 lbs. fat while No 62 produced only 3188 and 169 lbs. respectively The former produced 3.9 lbs. of fat and 2.8 lbs. of milk for each lb. produced by the latter, during the first two lactations though the maintenance requirement was practically the same for each, and the co-efficient of digestion was almost exactly the same The composition of the ration was the same and the amount suiting the individual.

Dairy Science suggests that the individuality of each animal should be measured and respected Development and profit are only possible through the development of individuality of each head of cattle by using the Breed-Feed-Weed-Heed-Creed-Need method.

TEST IS BEST

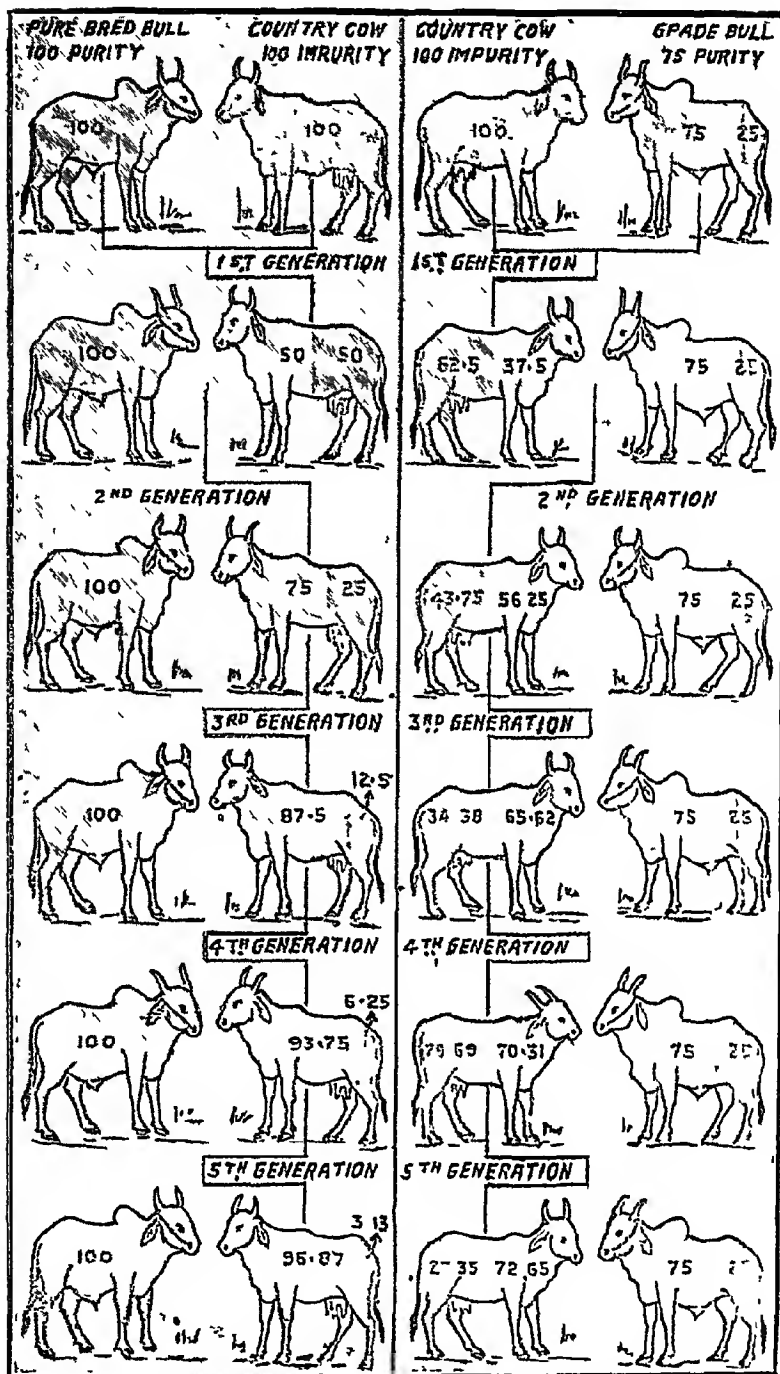


One cow at Illinois Experiment Station, made more profit in a year than the other 40 cows combined as in the picture. What then of our scrubs? Such one cow may equal to 200 to 300 scrubs. While compared to the world record cow, our myriad scrubs may hardly approach the Prospect in net profitability. The prospect alone yields as much as our 75 ordinary cows can yield.

The world record butter cow Dixie gave 1686 lbs. of butter and 33,447 lbs. milk fat in 1923, which means that it gives

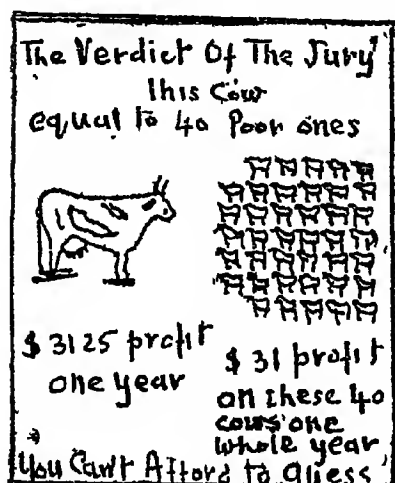
almost thrice as much butter as our cow ordinarily yields milk. Even the Record Sanan goat of America has yielded 5008 lbs. milk and 160 lbs. butter which also means that the American goat equals our four average cows! All

STAGES OF IMPROVEMENT OF BREED PURITY OF BREED IN 5TH GENERATION.



The picture illustrates how by the use of 100 p.c. pure Bull on 100 p.c. impure cow, purity of breed is attained at the 5th Generation while with the use of 75 p.c. Grade Bull imperfect purity is attained at the 5th Generation

TOWARDS COW REGENERATION



Such marvels are not the results of a day. It is not chance work. It is a hard earned labour and experience that pays them.

In a decade a Cow Testing Association has been able to produce 60 lbs. more B. fat per cow per year. (*vide supra*) The Dairy Herd Improvement Association in U. S. A. in 1927 averaged per cow 7510-293 lbs. as against 4600-180 lbs

In the small picture of the verdict of the Jury above, the Jersey cow that is seen was held out for sale by its owner Mr J M. Ragsdale of Missouri for \$ 75, but nobody wanted her, says the 'Hoard's Dairyman'. So he put her in a Cow Testing Association and she broke the State cow testing record by producing 527 lbs. of butter fat after the first four months of her milking season were over, and she cleared 267 39 above the cost of her feed. He had been offered \$ 175 for her but then she was not for sale

The Cow censuses of 17,000 cows conducted by Hoard's Dairyman on farms in many states demonstrated that the Dairy type cows yielded 51 lbs. more butterfat at an additional cost of only \$ 1 94 than the lackers. The good ones brought 17 38 dollars over cost of feed and the lackers only 2.03.

For 5 years the best fines on the Connecticut (Stores) Station returned \$ 39.67 each over the cost of feed, while the poorest ones only \$ 7.44.

Denmark by the services of the Cow Testing Association doubled the fat yield per cow in 24 years (112 lbs in 1884 to 224 in 1909) !

During the first eight years of its inception, U. S. A. doubled the average net return over feed cost by increasing 53 lbs. butterfat per head in 7 herds (Michi. 1905)

A L W A I Y S

★	P	★
	R	
DAIRY	E	BEEF
	F	
TYPE	E	TYPE
	R	
COW		COW
★		★

MILKERS NOT FATTENERS

A high producing Dairy cow or a milker cow is generally square and angular and a wedge-shaped form, viewed from the side, from the front, or from the top of the withers. She has a roomy barrel, spacious hind quarters, and a large, well-shaped udder.

(Humphrey, Wis. St.)

The Beef Type or a fatter cow has a low set, blocky, rectangular form and broad, smooth back. (*Humphrey, Wis. St.*) Several of our breeds are predisposed to put on fat rather than turn the feeds into milk

Always look out for the nervous (active) not the lymphatic (lethargic) type of cow. The former is a producer, the latter a boarder.

It pays to feed the former liberally. They use half the feed for milk production when fed liberally, while the fatter use only one quarter. When 75% feeds are given 33% of it is used for milk, when only half the feed is of course all that goes for maintenance. The fatter is more liable to turn the feeds into fat rather than milk.

Van Norman.

Fatter cows required 17% more feed per pound of B. fat produced than the milker cows at Minnesota Trial. (*Haccher*)

TOWARDS COW REGENERATION

EXPERIMENTS ON THE SAHIWAL HERD

All milk records were for 304 days after a 6 days' colostrum period. The individual milk-record was 7,053 lbs. in 304 days held by Kamli No. 312 and was recorded in 1926. It stood for 6 years until Chandrika No. 482 did 8,081 lbs. in September, 1932, under the new treatment followed by Ramati No. 566 seven months later who did 8,868 lbs. The original heifer record was 5,758 lbs. held by Kamli No. 312 until January, 1933, when under the new treatment Lalagi No. 596 did 7,019 lbs. in her first lactation and similarly in June, 1933, Larhi No. 604 did 7,648 lbs. also in her first lactation.

The selection yield for the herd was 4,000 lbs. from 1920 and cows giving under this yield were ultimately discarded. In March, 1932, before the commencement of the new treatment the herd consisted of 73 cows of which 8 gave between four to five thousand pounds per lactation, 17 between five to six thousand pounds, 6 between six to seven thousand pounds and none over seven thousand pounds.

HERD CHART IN MARCH, 1932 BEFORE SPECIAL HANDLING

Cows over 6,000 lbs			Cows 6,000—5,000 lbs			Cows 5,000—4,000 lbs.		
Name and No of cows		Best lactation	Name and No. of cows		Best lactation	Name and No of cows		Best lactation
Bendi	487	6,646	Mama	388	5,914	Hasni	.. 339	4,832
Mirja	396	6,360	Tutia	318	5,865	Radhika	... 512	4,794
Hanumati	. 399	6,190	Bina	356	5,862	Garbi	... 300	4,770
Nasoorti	427	6,187	Atuly	. 480	5,784	Muli	. 441	4,712
Admi	508	6,114	Munnie	. 454	5,574	Muraee	. . 547	4,492
Chengi	... 534	6,681	Bhagti	. 369	5,469	Rcema	... 447	4,170
			Chandrika	. 482	5,465	Bani	... 470	4,671
			Amba	.. 495	5,411	Ajbi	... 567	4,014
			Akli	281	5,406			
			Sampati	.. 311	5,286			
			Chapla	451	5,119			
			Chandra	.. 456	5,109			
			Roopbati	. 508	5,044			
			Mukta	472	5,586			
			Rookhi	555	5,310			
			Makhi	. 557	5,478			
			Ramati	568	5,066			
Total—6			17			8		

No. of cows under 4,000 lbs—42

ROMANCE OF THE COW

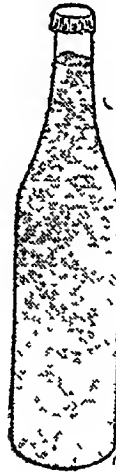
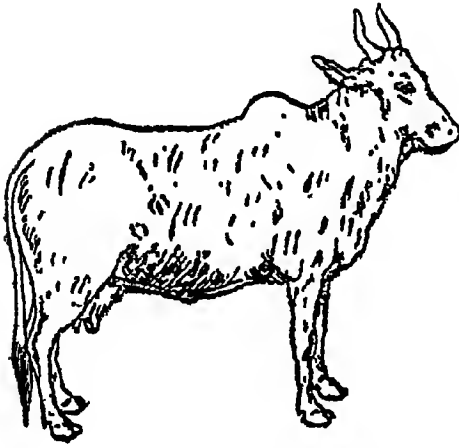
HERD CHART IN MARCH 1933, ONE YEAR AFTER SPECIAL HANDLING

Cows over 8,000 lbs		Cows 8 000 to 7,000 lbs		Cows 7,000 to 6,000 lbs		Cows 6,000 to 5,000 lbs		Cows 5,000 to 4,000 lbs	
Name and No of cows	Best lactation	Name and No of cows	Best lactation	Name and No of cows	Best lactation	Name and No of cows	Best lactation	Name and No of cows	Best lactation
Ramati 568	8,863	Chengi 534	7,901	Amba 495	6,822	Chakar 563	5,957	Aruh 551	4,848
				Rabri 504	6,475	Roopwati 508	5,874	Bani 470	4,071
Chandrika 482	8,081	Laruli 604	7,648	Mirja 396	6,380	Bina 356	5,862	Babri 576	4,201
				Chandra 456	6,290	Munnie 454	5,797	Chanee 518	
Ajbi 567	8,060	Mukta 472	7,254						
				Hanumati 399	6,190	Atuly 480	5,784	Radha 573	
		Makhi 567	7,226						
				Nasoorti 427	6,187	Rikha 586	5,655	Manmohini 581	
		Lalaga 596	7,019						
				Admi 503	6,114	Alga 531	5,628	Roshni 583	
		Lakhu 587	7,017	Chandrama 580	6,604	Rajkumari 589	5,587	Ramsakha 575	
				Bulki 580	6,160	Bhagti 869	5,469	Baleswari 598	
				Lalita 588	6,023	Akhi 231	5,406	Dhanwanti 600	
				Murree 547	6,937	Rookhi 555	5,310	Ragini 562	
						Chapla 451	5,286		
						Sampati 311	5,213		
						Bansuri 599	5,034		
						Roochi 544			
						Reba 597			
Total—3		6		11			16	11	

No of cows under 4,000 lbs—18

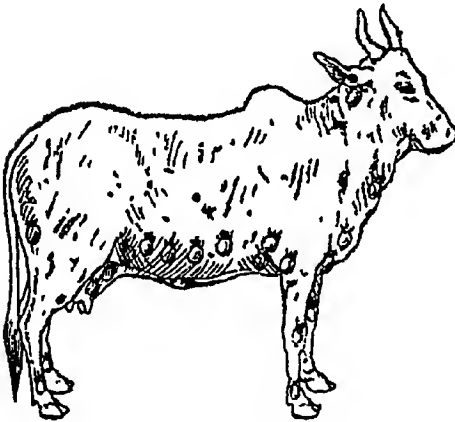
—Agriculture and Live Stock in India IV—II

PEST-FREE CATTLE MEANS MONEY

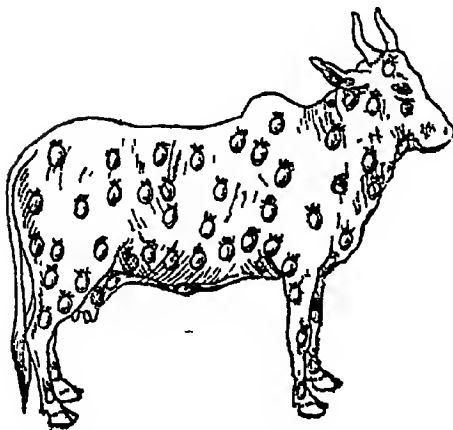


Pests that infest our cattle cause damages beyond one's imagination.

If few ticks happen to have an access to the Western cattle even for a day, the animal is sure to be down with Tick-fever which proves fatal in no time.

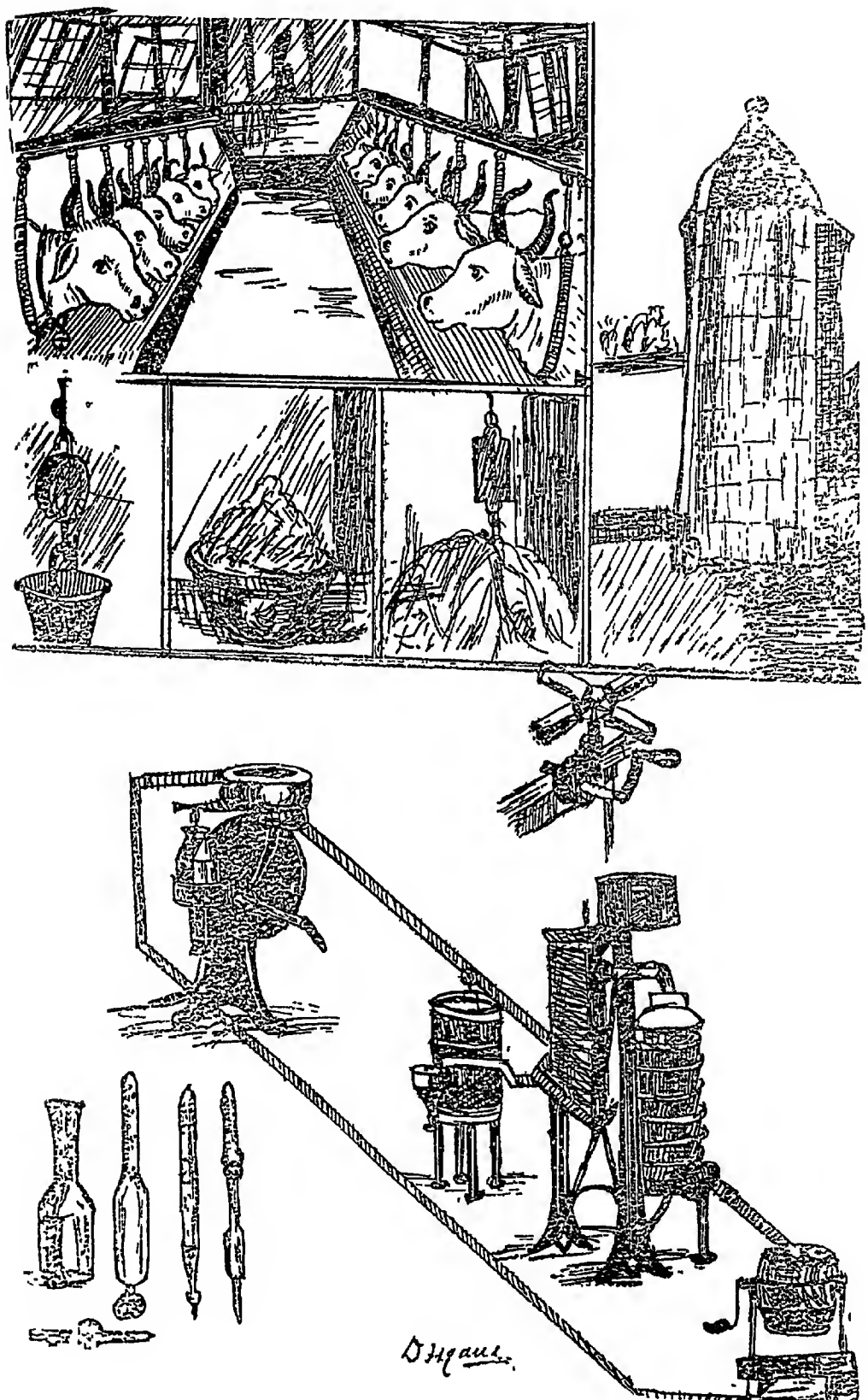


Our scrubs have been destined to the ticks and all sort of veterinary pests for generations upon generations, as a consequence whereof they can although escape death, cannot escape discomfort and annoyance



This habit of carelessness does not cost them alone, it costs us in crores. Tick days should be observed by youth leagues, schools, colleges and other institutions to stamp out this evil. Through general comfort, hygiene and kindness a lb a day increment in milk per cow may amount to Rs 2000 ! When shall we open our eyes to these glaring omissions?

IMPROVED METHOD OF GO-VYAVSAY (DAIRYING)



CHAPTER XVIII

DAIRY FARMING

Look out for the Menless Jobs

Dairy Farming-the Best Adjunct of Agriculture.

Ruminants and Roughage

Economics of a Silo.

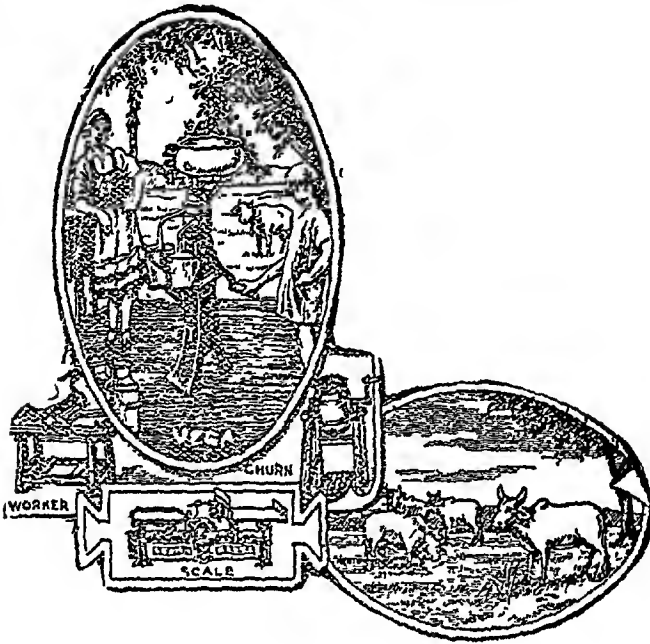
Compost-Pit. The Farmer's Reserve Bank in India

Indore Method of Synthetic Manure



DAIRY FARMING

LOOK OUT FOR THE MENLESS JOBS



Dairying and dairy farming are linked together. If Indian peasantry takes to cow-keeping on their farms in place of buffaloes or exclusive money crops, their land will be rebuilt and they will get some by-industry to live by in idle months. A glance at the chart of symbiotic cycles will show how prosperity can work if those cycles are again set in motion.

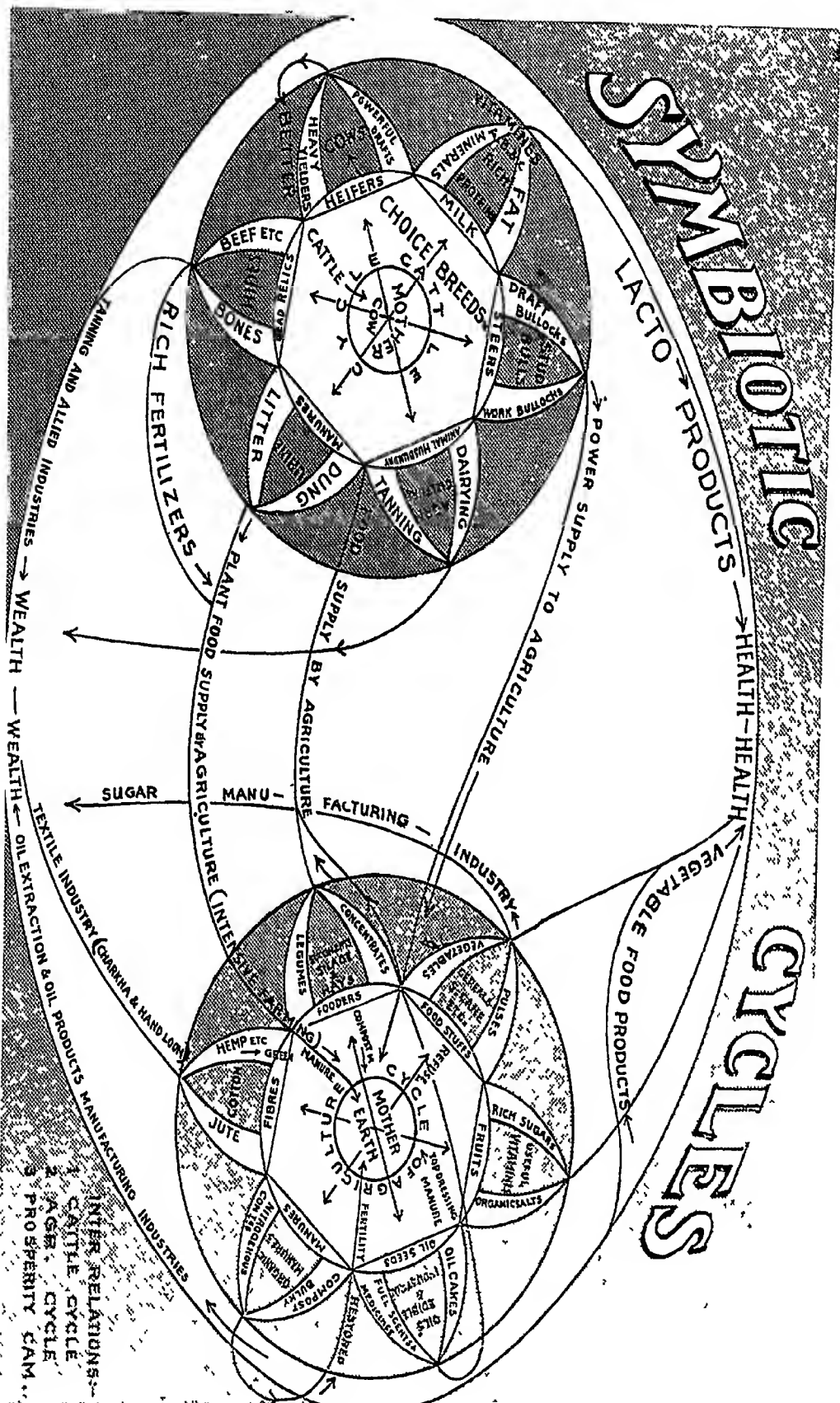
In the West they have built diverse secondary industries by utilizing the Dairy and Farm products. Casein, milk powders, lactose, sanatogen, and countless other medicines and foods are manufactured, and some further products and industries are launched by the use of those secondary basis.

Industries from dead relics have also so stupendously been evolved that the West is tickling with fat profits. Live-stock by-products such as boots, shoes, machinery belting, soap, candles, glue, fertilizers, animal and poultry foods, insulin, serum have rolling trade in the market of the world.

Let us cite the instance of United Kingdom G. R. White in his paper before the Royal Statistical Society quoted that the live-stock by-products alone fetched £ 121,000,000 in 1924, while the by-products industries extended to £ 97,000,000. The total output was £ 10,000,000 more than the total value of all the live-stock sold for slaughter in United Kingdom and was more than twice the value of the output of the ship-building or chemical industries in the same year.

LACTO → PRODUCTS

VEGETABLE FOOD PRODUCTS



DAIRY FARMING

In 1924, the livestock by-product industries gave employment to 350,000 persons about two thirds the employees in the cotton and one and one quarter of the woollen industries.

—Mysore Economic Journal.

India is losing ground as an agricultural country; it shall regain by the help of its live-stock and live-stock industries. It is no use crying for the jobless men, it is sure to turn out a cry in the wilderness as it has. One has on the contrary to find out menless jobs and harness one's energies to them.

DAIRY FARMING: BEST ADJUNCT OF AGRICULTURE

Indian agriculture is sinking to the abysmal depths of dependence and despondency from day to day. Low fertility, low prices, heavy debts, adverse exchange ratio, high rates etc. conspire against tillers of the land. They are deeply stranded in the slough of despond. The leakages in the tub of farmer's prosperity tell their woeful tale in the Tub Graphs.

'Balanced, Diversified and Intensive Farming' is after all what Indian farmer has got to develop. Dairy farming will prove to be the most suitable adjunct to his agriculture. Let us study the table below which proclaims the adjunctive value of animals etc. to crops. Exclusive cropping is courting poverty of the land and purse.

DIVERSIFIED FARMING RELATED TO PROFITS ON FARMS SELLING WHOLESALE MARKET MILK

% Receipts from Crops	% Receipts from Milk	No. of Farms	Average Area in Acres	Labour income Dollars
15 or less	85 or more	14	209	769
16 to 30	84 to 70	28	218	1210
31 to 50	69 to 50	25	264	1225

Warren—Farm Management.

SKIMMILK PRODUCTS

Twenty five Million Dairy Cows on four and a half Million American farms produce to more than 100 Billion lbs. of Milk a year. The combined production of skimmilk and buttermilk averaged approximately 55 Billion lbs yearly.

While the butter fat in Milk is its most valuable constituent from the stand point of sales income, it comprises only about one-half the energy value of milk. The solids not fat, which are contained in skim and buttermilk, contain proteins and minerals that are highly digestible and probably of more actual value in nutrition than the fat itself

ROMANCE OF THE COW

Besides skimmilk and buttermilk being used for direct consumption, increasing amounts have been made into manufactured products, such as dry milk powder, condensed and evaporated milk, casein, and skimmilk, cheese such as cottage cheese.

It is estimated that these manufactured products such as dry milk used over 7 Billion lbs. of skimmilk and buttermilk in 1935 as against 2 Billion lbs. in 1920. In 1935 the skimmilk equivalent of these products was 55 lbs. per capita as against 16 lbs. in 1920.

PRODUCTS OF SKIMMILK & BUTTERMILK IN 1935

(U S. Bureau of Agr. Eco.)

	Thousand lbs.	Per lbs. product.	Total Thousand lbs.	
Skimmilk powder	297,506	11	1848677	47%
Dried Casein	37,638	35.7	18,8677	19
Condensed & Evaporated Skimmilk	317,707	3	953,121	14
Skim Cheese	109,579	625	684,869	
Buttermilk powder	49828	11	548,053	
Condensed & evaporated Buttermilk	70543	3	211,629	

SKIMMILK POWDER IS LARGELY USED IN BAKERY, ICECREAM AND CONFECTIONERY

Dairyfarming is not infrequently more lucrative than many of the cash crops. The former builds what others destroy. The former replenishes the lost treasures of plant food and should obviously be a complimentary feature of farming.

RELATION OF RECEIPTS PER COW TO PROFITS

Self-supporting Khaddar on one and Dairying on the other hand are the only two possible props that can support the tottering Indian peasantry. Besides filling his forced leisure with useful and productive employment and building the farm, they are sound insurance policies against starvation and penury. They are likely to add each 12 to 20% to the total farm produce. An Indian farmer who has not his poultry, bee-keeping, silk industry and pigs etc. shall have the sure means of subsistence. But the buffalo should not come in his way. For comparison let us cite how our fraternity fares in the other hemisphere.

Repts. per cow (Dollars)	No. of Farms	Labour Income (Dollars)
30 or less	18	30
31 to 50	97	316
51 to 75	106	483
76 to 100	53	715
over 100	33	1825

See how a single cow nets from Rs 100 to Rs 300 and the cows are in herds of 12 or more. India has got to take to cow-keeping along with cow-protecting if it wants that its villages, its peasantry, its agriculture and its general prosperity should survive or recover. That is the *sine qua non* for India.

WHAT HER BARREL-CAPACITY INDICATED ?

The 4 stomachs of a full grown cow may hold over 250 quarts, while the single stomach of a horse holds only 12 to 19 quarts and of a pig about 8.5.

The small intestine is the long folded, tortuous tube into which the stomach empties. It is about 130 ft. long in mature cattle, 70 ft. in Horses, 80 ft. in Sheep, and 60 ft. in Swine. Its average capacity is as follows —

Cattle	.	.	.	.	..	..	70 Quarts.
Horse	..	..	..	..	..	...	50-60 „
Sheep and Swine	...	..	.	..	.	.	10 „

The large intestine into which the small intestine empties, is larger in diameter but much shorter.

The cavum of the horse holds 120 to 140 quarts. In cattle—its capacity is 40 quarts and sheep 6 quarts.

* * * *

These large capacities account for their capacity to turn grasses and roughages into luscious milk by according ample space for digestive, absorptive, and assimilative systems to function well.

* * * *

But unfortunately they don't get even grasses *quantum Sufficientum* to secure the peristalsis in good order. They therefore go out of condition, deteriorate and lose stamina for the lack of sufficient fodder. The average in our Presidency is hardly 7 lbs. (re. Bombay Bulletin by Kelkar). Then where to talk of the concentrates ?

RELATION OF RECEIPTS PER COW TO PROFITS

Cattle deprived of roughage and fed on skim milk and grain exclusively, thrive for 4-6 months, then the weight remained stationary and collapsed at last. But with the addition of hay or straw they recovered even after 7 months.

(Davenport)

2 calves only on whole milk died on 208 and 176 days, though they grew fairly well for 2-3 months, then more slowly and finally declined in weight and got fits and flexible bones.

(Mac Candish)

ROMANCE OF THE COW

14 animals were kept on milk and supplemented with various materials. 11 of them succumbed, 10 before 300th day of experiment. Nervous disorders, convulsions, stiffness of limbs and lowered blood lime were the symptoms. 3 had red iron supplement and survived 501, 611 and 710 days.

(Huffman and Robinson)

These series of experiments demonstrate the bare necessity of roughage and limb. Milk-fed animals do not thrive as well as those fed on fodder and foliage. The secret of this could be traced from the study of the barrel capacity of cattle which cannot be neglected or ignored without incurring considerable damage to the owner and the animal.

ECONOMICS OF A SILO

If Silo is a veritable boon to the West, it is a greater boon to India. Even though where there are some green stuffs available, yet dry hay and stalks are partially to be fed to the cattle. Silage is not to replace green grass (soilage) but it is to supplement it and to supplant the dry, tasteless grasses and fodders of low nutritive value. It is cheap to make, store and feed. Animals relish it so well and there are marked increments in milk production. Cheaper and larger productions are the double gains accruing therethrough.

Let us take figures from a Minnesota Cow Testing Association.—Silage minimised the cost of production of every 100 lbs of milk by 35 c. and of every lb. of butter by 10 cents. There being twelve eight thousanders in the experiments.

	Dollars
0.35 × 12 Cows × 8000 lbs. = yearly increment of	... 336
19 c × 150 gallons per cow increment in yield × 12 =	... 342
40 c × 170 lbs. butter increment in yield × 12 =	... 336
10 c × 285 lbs. butter × 12 =	... 342

Saving per ton of silage fed to live stock (\$9-\$5) 340 for 85 tons of silage.

In a single small herd of 12 cows plus their young stock, there is a net gain of 1696 dollars per year, proportionate to Indian conditions even though the profits may be much reduced owing to the run down cattle, yet the gains are to be sure and steady.

A Silo pays its cost in two years.

SOILING

Soiling is the practice of cutting green fodders as they grow and feeding them to the animals. It saves land, fencing and economises food, keeps cattle in better condition and greater comfort, more milk, increases quantity and quality of manure, greater docility and discipline of animals, less breaking of fences, ensures regularity of feeding and output.

HAY vs SILAGE

Silage proved superior to hay by 16% in the following trials.—

LIVE WEIGHT INCREASE IN LBS.

Expt. (1920-21)	Days	Hay	Silage
1st period	49	1 00	1.61
	41	1.10	1 16
	63	1.41	1.67
Expt. (1921-22)	49	1.18	1.61
2nd Period	60	1 45	1 57
	42	1 26	1.81
Average of 56 Cattle	..	1 23	1 56

VARIATIONS IN THE QUALITY OF BUTTER—BY FEEDING ARTIFICIALLY DRIED GRASS TO STALL-FED CATTLE

An experiment carried out in the winter of 1931-32 with four groups of cows was designed to measure the effects of two types of artificially dried grass, and of grass silage, on the quality of resulting milk and butter in comparison with that produced on a normal winter ration. The results show that for cows fed on normal winter rations of hay and concentrates, the carotene, xanthophyll and vitamin A values fall steadily during the winter and remain at a very low level until the cows go out to graze in the Spring. The consumption of fresh grass then results in a very rapid rise of quantities of all three substances present in butter. In the case of cows fed on artificially dried non-nitrogen-treated grass, the butters showed very soon after the change over from the control diet, an increase in the content of the two carotenoids and of vitamin A, which was maintained until all the groups were again placed on the control diet, when the values dropped to the low control level. The results with the nitrogen-treated artificially dried grass were even better than with the non-nitrogen grass. Grass silage of moderate quality was found to be little superior to the normal winter ration in its effect on the colour and vitamin A of the butter. It may be concluded that the relatively high proportion of carotene, xanthophyll and vitamin A present in summer butter can be maintained during the winter period of stall feeding by the use of artificially dried grass.

—The Analyst (Vol LVIII—No. 691)

COMPOST-PIT THE FARMER'S RESERVE BANK IN INDIA

Under the sky to-day anything and everything Indian is starved, and therefore stunted. Indian soil is starved of Nitrogen, Phosphorus, and Potash in main. Every other ingredient entering as a Plant-Food may not be lacking but by perennial cropping without any recuperation by way of manuring, our mother Earth is sadly starved of those three.

Of all the manures and fertilisers, the bulky Farm Yard Manure that is voided by cattle is the supreme. India is so poor that it cannot as it should not, afford to waste its cattle dung and urine, and use the fertilisers which may not produce crops as nutritive and as cheap as Farm yard manure. The latter acts as Harmones to the Soil, and hence is more effective. But to our great sorrow we do not possess the art and skill of Composting the Manure.

Organic Manure is the essential of all sorts of manures. But short-sighted and impoverished people as we are we burn most of our cattle-dung supply. Urine we don't preserve in general. The cattle, though so many, are so poor that the total manure that we could replenish the exploited soil with, is only sufficient for 2% of the Indian Soil.

(Poona Agricultural College Mag.—computed by Gokhale and Desai.)

Of the Farm Yard Manure the gaseous elements are the richest, liquid elements are the next best, and lastly come the solid residum. India needs these three combined and quite in a ready form. Again Synthetic Manure is the only kind of Manure which can supplement the scarcity of rich, useful manures tolerably well.

Compost all sort of rubbish, refuse and relics of all sort in a pit with a roof above. Keep the deposit moist, add earth, chunam and litter and any little amount of chemical fertiliser if possible, stir it two or three months, preserve moisture. Put in 1.2% of copper sulphate to avoid fungus and other obnoxious growth.

—(Science Congress Reports.)

Truly and verily Compost-Pit shall enrich Indian Soil, the Soil shall enrich Indian Vegetation, Indian Vegetation shall enrich Indian Animals and cattle, and all the Indian Vegetation, Animals and Cattle shall enrich Indian Humanity.

Primarily therefore start with enriching the SOIL. A COMPOST IS
THUS THE RESERVE BANK OF INDIA'S PEASANTRY.

Activated compost by the aerobic method of Dr. Fowler and laterly as improved Indore method has revolutionised other methods of preparing synthetic manures so soon, so cheap, so fine.

A silo is the Farmer's Savings Bank as a Compost is his Reserve Bank. If these two banks are well organised, the farmer may be tangibly relieved of the strain he is so sadly subjected to.

INDORE METHOD OF SYNTHETIC MANURE

The new process described below is simpler and easier than the standard Indore process previously described, and the poorest or most ignorant cultivator can use it without difficulty or cost. The compost manure so made is like that made by the standard (containing about 1% nitrogen) and though there are some losses of nitrogen in the beginning, and the final quantity of manure is about one sixth less in bulk than with the standard process, yet these apparent disadvantages are more than made up by the saving of labour and water, where these are costly or scarce. The process varies slightly according to whether cattle are housed in a shed or tethered in the open.

Where there is a cattle shed the materials needed are :

1. All kinds of useless farm wastes, which should be collected during the year, and stored in a heap in layers as they arrive. Hard materials, such as cotton stems, should be cracked. This can be done by spreading them for a short time on a cart or cattle track. Very hard wastes, like stumps and roots, should be cracked and then left in a separate heap for a year before being used for compost.

2. Cowdung.—Only one-quarter of the cowdung collected daily is necessary, if the rest is needed for fuel; otherwise the whole amount can be used.

3. Wood-ash should be collected from the fires and stored.

4. Earth and urine.—The top six inches of the earth floor of the cattle shed should be dug up every four months. The finer part of this urine-earth can be kept for compost making, and the rest added to fields as manure. Urine-earth is itself an excellent quick-acting manure and can be applied direct to crops. The floor is re-made with fresh earth. Wet patches should be scraped daily, and a little earth put down to prevent smell. These scrapings should be added to the heap.

Method.—Four to five¹ *pals*² of farm wastes are spread on the cattle shed each morning; this serves as bedding for the animals, and catches a part of the urine. Next morning the surplus dung (about $\frac{3}{4}$ of the total of 1 $\frac{1}{2}$ *tagaris*³)

1. Quantities on the basis of 4 animals.

2. A stretcher made from a piece of gunny sacking 4' x 8', the longer edges fastened to two bamboos each 7' 6" long.

3. A sheet iron basin 18" across and 6" deep the numbers quoted are for this size.

ROMANCE OF THE COW

on the average) is removed for fuel if needed; about one-half tagari of dung with one tagari of urine earth, two handfuls of wood-ash, together with the used bedding and sweepings from the cattleshed are carried away, and stored on a suitable well-drained site (such as the edge of a field) to make a heap 8 feet broad, 3 feet high, and any convenient length. All materials to be rotted during the following monsoon should be collected throughout the dry weather and placed ready before the rains start.

Where the animals are tethered in the open, the mixed wastes from adjoining fields are collected in convenient places. Part of this refuse can be used for daily bedding, if the cattle are tethered near enough, and then made into heaps as described above. If this refuse cannot be used as bedding, heaps can be made, along with the proper quantity of earth, if possible scraped from where the cattle usually stand, ash and cowdung. After the first heavy showers the heaps are turned with a strong wooden rake with four or five thick teeth so as to make a fresh heap at one side or one end of the old one. The object of this is to mix the wet and dry material together, so that rain may soak in better and ensure good rotting.

About a month after the first turn the heap is again turned as before, the mixture being replaced where it was originally collected.

About a month after the second turn the heap is turned for the last time. These turns ensure the distribution of moisture, and let the necessary air into the heap.

Turning should be done on a moderately rainy day, or at least a cloudy day, so that the heap is moistened, and evaporation checked.

The time-table given is for a normal season; if the rains are delayed at any time, the time of turning should be delayed accordingly, and an extra turn given during the last stages if the heap is not well rotted.

The manure is generally ready to use in about four months and large quantities have been made in this manner during the last three years at Indore. Three loads of farm wastes will make more than a load of compost by this modified system.

Rev. Buchanan.

Note.—Particularly in districts where rainfall is apt to be uncertain the process is more rapid if sawn hemp is sown on the top of the heaps after the first turn. Half a chatak (1 oz.) of seed per 40 sq. ft. is sufficient. Whatever growth it makes is mixed in with the rest of the heap at the second turn and promotes rotting.

CHAPTER XIX

DAIRY TIPS

- 1 Dairy Tips
- 2 Milking Science
- 3 Making Cottage Cheese.
- 4 Milk Insurance.
- 5 Dairy Axioms
- 6 Outstanding defect of Rural life
- 7 Peace be to all.



DAIRY TIPS

Let your small holder in India put his sweat and that of the really good cattle into the land ; let him keep silk worms, go out on hire with his bandy, keep a kitchen-garden and fruit-tree, and spin and weave, and keep half his land for fodder for his cattle, and he will prosper and his cattle will thrive. If the holding is even smaller than 4 acres and small pieces here & there, it is wrong for him to keep half-starved cattle at all. Let him work his land with the hoe instead of the plough, as the Japanese do

My whole point is that if he keeps cattle at all, he must keep them as he does his own children and see that they have their food daily and he cannot do this unless he keeps half his land at least, but better three fifths, to grow fodder, and when he next plants a cereal where the fodder grew, he will find it yields three times as much and he will not diminish human food by reducing the area he grows it on ; he will increase the amount of human food.

Indian poverty does not stand in the way of rotation of crops Rotated crops require no more expenditure of money than stable crops We wish to convince not to compel Here my hope is that the directing class will undertake the work of persuading the people and that you, the spiritual director of the directing class, will be the first to put your hands to the plough. Your support will make all the difference, 10 crores of Indian cattle are mutely appealing to you.

The Indian is not cruel to his cattle, but very, very callous. He will not give up one inch of land to them In India we have only the straw stack, stuff fit for cattle to sleep on but not to eat.

Mr. A. Galleti, Collector of Ganjam's Note to Gandhiji.

Young India 13 May, 26

DAIRY TIPS

ECONOMIC FEEDS

Costly feeds are not always good feeds. Not infrequently the cheap feeds are richer in nutrition. Feeding standards established according to the nutritional economy and mathematics should be grasped and followed. Always look to the age, stage, season, state, performance and market and select the ration. Feeding adjustments are the call of the day.

TEST MEASURE

Measure the weight, produce, cost, income, and net profits. Assess the biological and economical value of each head of cattle and ascertain its qualitative value and always go by it. Don't go by appearances, but go by science. That shall enable you to establish fundamentals of Dairy amelioration in India.

AFFINITIES OF LIFE

All life is responsive to comfort and kindness. The cow enjoys a beautiful sympathetic nervous system and as such is supreme and supermost in the animal kingdom. It responds to music, it responds to peace, it responds to treatment and what not ?

It gave 16% more milk by music, 17% to 93% on freeing itself from ticks, and on liberal watering, salting, feeding etc. etc. Add to their affinities of life and measure the difference. The scale always turns in your favour.

CLEANLINESS

Cleanliness is synonymous with dairying. Every article and every item in Dairy practice must be scrupulously clean. It pays its own price. Milking must be especially clean. No dirt, dust particles should be floating in air while milking.

Grooming, washing and rubbing the teats, udder and hind quarters anticipate special care and skill. Use of Improved milk pails, milker's dress and personal cleanliness cannot be too much emphasised.

Potassium permanganate, bleaching powder, warm water should not be spared. They should be liberally used. Gargling, encina, douching, grooming, massaging are the practices which could be and should be easily mastered by those in charge of the herd.

ROMANCE OF THE COW

DESTROY THE PEST

Ticks, lice, flies, fleas and a horde of cattle pests should be destroyed as soon and as effectively as possible. Those small insect urchins are a plague to them and should be ridded without fail.

VETERINARY AID

Veterinary medicinal chest with simple native drugs and important allopathic drugs and instruments should be improvised, in order to minimise troubles and expense.

RING THE BULL

Punching the septum of the nose, the bull should be ringed while a calf. This is the most effective and easiest way of leading the animal and keeping it docile. Indian bulls otherwise become very vicious and ferocious.

DE-HORN THE YOUNG STOCK

The young stock should be dehorned by rubbing the horn points during the first week of its birth by caustic stick. (Lunar caustic.) This saves them from troubles and can be handled more confidently and smoothly. Horns were means of defence and offence to the animal while in a wild state.

CASTRATE STRAY BULLS

Any bull and every bull to-day can and does prostitute our herds simply having free association with the cows and heifers, the net result whereof is degeneration of the cattle world. Breeds have gone down to the much economic dismay of the Indian people. And the chief perpetrators of this mischief is the stray bull. All stray calves, except those selected for breeding purposes, should be castrated at the first opportunity. This shall give us better bullocks of them, and also better stud bulls and better cows. Milk and Draft Services shall materially be improved. Dr Berdizo's castrator shall humanely revolutionise the taurine world and rule cosmos out of chaos.

SPAY THE CONTAGIOUS COWS

The cows that suffer from contagious abortion are not only a drag and burden to the land and herd, but also they form a source of further mischief by spreading contagion among the healthy heifers and cows. Such cows in particular and old decrepit and economically sub-marginal cows should be at least spayed if they are allowed to survive. Spaying is a humane process of unsexing the animal.

ISOLATE THE BULL

There should be no bull but a stud bull, and that too should not be suffered to approach promiscuously any cow any time. For guiding a herd, one has to breed according to certain principles and policies. To isolate the bull from the herd therefore is the soundest principle and safest policy in achieving almost 99% of success.

TATOOING

Numbering by ear marking the animal is the most suitable policy and that could be done by punching with a tattooing machine.

HAND-FEEDING THE CALVES

For securing clean milk and full milk, the calves should be initiated in hand-feeding. Sucking should be a taboo. This could be done by wrapping the mothers eyes by blinkers while calving, and teaching to lick the milk by fingers.

SALT FEEDING

The expectant mother and the mother in milk do require salts to maintain her body and to build its child and manufacture milk with. Such a mother therefore needs an extra amount of salts. But in India where the green succulent fodder is a mere luxury and the poor creatures have to take out their life merely by browsing and grubbing the roots, stubbles and straws etc do require salts in sufficient amount. With every thousand pounds of milk the cow parts with 7 lbs of salts which loss she has to make up from her body when the due amount is not doled out.

Every mature animal requires two and a young one one ounce of salt in its daily ration. This requirement is keenly felt in dry season and on dry fodders and feeds. The practice of hanging pieces of rock-salt in the stall is advisable and paying. The following mixtures of salts work wonderfully on development and performance of the animal and may therefore be tried with interest.—

(a) 40 lbs. of fine bonemeal

40 lbs. of lime

25 lbs. of salt

3 oz. of Potassium Iodide

(b) 50 parts of bonemeal

28 „ lime stone

20 „ salt

5 „ sulphur

2 „ Iron sulphate

3 oz. of Potassium Iodide with
2% of grain concentrates.

ROMANCE OF THE COW

WATER AT WILL

Cows watered once a day drank less and produced less than when watered twice a day or at will. Cows watered twice a day drank as much but produced less than cows watered at will. The higher the production, the greater the benefit to be derived from frequent watering.

NOT EXPENSE BUT INVESTMENT

If the cow is a producer and not a 'boarder,' money spent after her betterment and comfort is repaid with significant profits. It is only the scrubs sunk to the submarginal level that cannot repay at all. It is perhaps as good as to throw away money into the deep ocean rather than spend through charities in such a way as lowers down the quality and the animal groans in misery for nothing. The latter on the contrary foment troubles sometimes. Always look before you leap and count before you spend. Count the consequences if not the profits. But count them and then act

Let us now learn from our counting brothers in the West:—

One Mr. Will Klatz in the Chicka saw in Iowa invested \$25 in a good tank heater. Cows made an average gain of 56 lbs. of B. fat each in the year valued at \$28.34 enough to pay for the heater and coal, the very first year.

CLEANING MILK-VESSELS

Clean milk pails and cans are more important than clean stables and clean cows and even clean man, important as all these latter are.

1. Rinse with clean water immediately on use before milk dries.
2. Use hot-water containing a dairy washing powder! Use a brush and not a cloth for scrubbing.
3. Rinse with clean hot water.
- 4 Sterilize with steam, boiling water or a hypochlorite solution.

—Agriculture and Live Stock in India.

Bottle cleaning materials:—Soda, carbonate of soda plus soda-silicate. (Cleaning and grease removing) Against bad effects of hard water, add 200 to 300 gms. of Disodium phosphate for 3 kg. of crystalline Caustic Soda.

—Inter. Review of Agriculture.

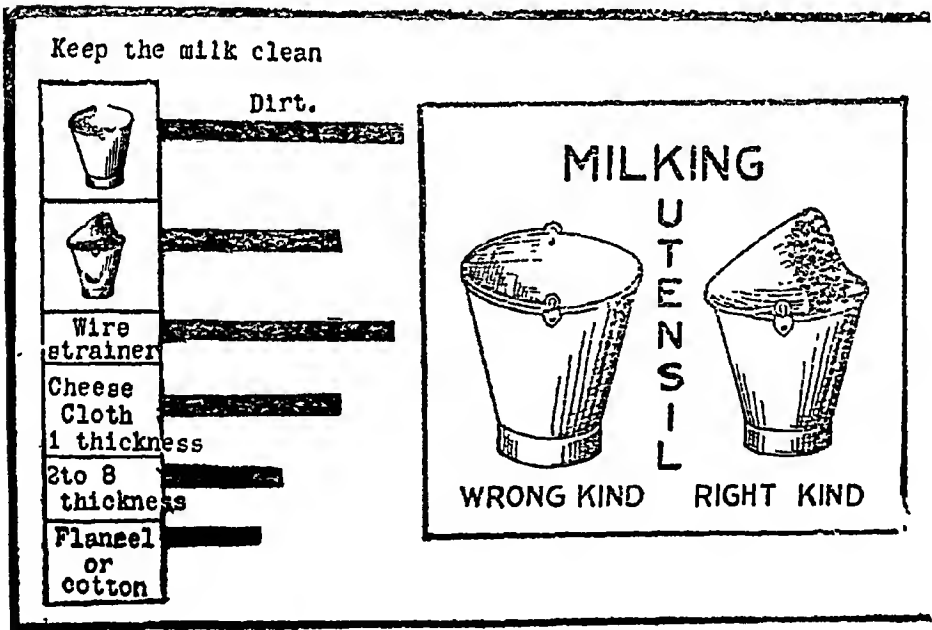
DAIRY TIPS

BE KIND

One of the duties a dairy farmer too often neglects is to train his boys how to milk properly. To begin with, the farmer himself must be neat and clean at the job, otherwise he cannot set a good example. He must never permit wetting a cow's teats when milking, as it is a dirty practice, and it makes the teats chap and become sore in cold weather. A small amount of vaseline may be rubbed on the hands if there is difficulty in milking dry, and it proves beneficial. Another thing to instill in a boy's mind is, that it pays to be kind and patient with the cows at milking time in fact, at all times. It is well known that one man can get more milk than another man from the same cow and with the same feed. Beating a cow with a milk stool when she kicks or switches her tail sometimes "adds insult to injury." The milker is more often to blame for the cow's fear in letting down her milk than is the cow. The only way to overcome this fear is for her caretaker to be patient and gentle with her.

—Queensland Agricultural Journal.

MILKING SCIENCE



Milk cleanly, completely and briskly. Final strippings are the richest in fat percentage, they contain as much as 18% fat. Not doing so is fomenting trouble for the animal.

By experiments with heavy milkers it has been demonstrated that three milkings have 10 and four milkings have 16 per cent. additions in milk yield over two milkings.

ROMANCE OF THE COW

The milking machines worked by electricity are three to four times as quick as the hand milking and the animals enjoy them, but scrupulous care is to be taken for cleanliness.

In Germany a Scientist gave music while milking the animals, and the animals responded to such a genial treat so splendidly that there was a clear gain of 16% in the milk yield.

Hegelund's manipulations 1, 2, 3, serve the same purpose as stripping but is claimed to be more efficient. Wing and Foord found that from 3 to 13 lbs. and an average of 8.75 lbs. of milk containing .68 lb. fat were weekly secured from each cow by the Hegelund manipulation as an effective means of securing all the milk. In a test two milkers were leaving 20 cents worth of fat each every milking that could be removed by proper methods. In another herd 8% to 16.9% fat was lost by failure to milk out all secreted.

"SUMMARY OF ORDINARY PROCESS OF MAKING COTTAGE CHEESE."

The process of making cottage cheese without rennet, on the basis of 30 lbs. or about $3\frac{1}{2}$ gallons of milk, which will yield about $5\frac{1}{4}$ lbs. of cheese, may be summarised as follows:—

Obtain clean fresh Skim milk.

If starter is not used, warm the milk to 75°F. and hold it at that temperature until curdled.

If starter is used, add from 1% to 5% or about 1 pint of starter to 30 lbs of milk, stir and set away at 75°F to curdle. If it is desired to pasteurise, heat milk to 145°F, hold at that temperature for 30 minutes and cool to 75°F. If pasteurisation is practised, a starter must be used and should be added after pasteurization as described.

Time for curdling when starter is used will be from 12 to 15 hours. (Usually over night.)

When starter is not used the time for curdling will be about 30 hours.

Cut and stir and then heat to 100°F and hold for 30 minutes. Stir gently at intervals.

Pour upon cheese cloth and drain for 20 to 30 minutes. Place in pan or pail and salt at rate of $2\frac{1}{2}$ oz. to 10 lbs. of curd—or about 2 level teaspoonfuls for the cheese from 30 lbs. milk.

If desired, add sweet or sour cream at the rate of one half pint to 10 lbs. of curd or about one quarter pint of cream to the product from 30 lbs. of milk.

U. S. A. Farm Bulletin 1451.

MILK INSURANCE

The practice of feeding a dry cow is an insurance against next year's low yield, and nothing else. The great majority of dairy farmers seem to think that when a cow is dry she does not need any special attention in feeding. This is a big mistake, because it is just as important to feed a good cow when she is dry as it is to feed her what she needs when in milk. The conclusion arrived at after many conversations with dairy farmers is that the dry cow, not being revenue-producing, is looked upon as a nuisance among the cows in milk; and also that a dry cow costs money to feed and maintain. They evidently do not appreciate the fact that nothing on four legs is nearer perpetual motion than the cow, either milking or dry. It must be thoroughly understood that the dry cow is doing three very important things for herself, her owner, and the dairy-industry, building up, of the calf's body, storing up fresh tissue within her own body to draw upon when she freshens, and maintaining her own health. It is quite certain that water and dry grass will not do these things, and if a cow gets nothing else than water and dry grass the flow of milk when she freshens will soon diminish, and likewise the profits. In a newly freshened cow the supply of milk is fairly good; when without any apparent reason the supply slackens off instead of keeping up for some months, you have silent evidence that she was not given the feed she should have had when dry. It must be thoroughly understood that the cow builds up her worn out body tissues, builds up flesh, blood, and bone of her unborn calf, and also makes the milk she gives from the feed that is given to her. If a cow is a heavy milker she makes great demands on the reserved nutrients and minerals she stored in her body, and these can only be placed there by feeding. During the time she is dry she uses the feed she eats for body building and development of her unborn calf, but if you neglect to feed her during the dry period, it is the cow that goes short, but not the calf. In consequence, the cow calves in poor condition, and has no reserves to draw upon. It can be seen from this that the cow that is fed while dry lays up a reserve store of flesh and she has that to draw upon for some weeks after freshening. This will enable her to come to her full flow at about the time the cow that was not fed when dry begins to go off in her milk. The dry cow should be looked upon as a prospective milker and not as a nuisance. But is she? Where good pasturage is obtainable light feeding only is necessary, but on no account should she be allowed to approach the period of exhausting labour in a low or indifferent condition.

Queensland Agricultural Journal.

INTRODUCE THE SEPARATOR

**"300,000 Alfa Laval Separators alone were
sold upto 1925".**

CARE OF THE SEPARATOR

The operation of the separator and the care devoted to its cleansing have a material effect on the quality of cream produced. On no account should the separator be left overnight without being dismantled, and all parts thoroughly cleansed and scalded. After separating, all utensils and separator parts with which milk has come in contact, including the vats, buckets, and strainer, should be washed with slightly warmed water and then submerged in boiling water and placed on racks to drain. The practice of wiping over the utensils with a cloth after scalding only serves to undo the work of sterilization and to re-infect with bacterial organisms.

Milk should not be left lying about on the floor or under the separator block, and the surroundings should be kept sweet and clean, and the drains free to carry away the floor washings.

—Queensland Agricultural Journal.

Old Debts Redemption Bill Land Mortgage Banks. Producers and Consumers Co-operative Society Co-operative Dairying. Dairy Factory System in Villages. All such measures can solve the Problem.

SOME DAIRY AXIOMS

The most constant factor in agriculture is the constancy of change. Never buy a thing because it is cheap, it will prove dear to you in the end. Always look to the working cost. Let it not be a poor man's luxury.

* * *

If a farmer instead of selling off his crops, feeds them to live stock on the farm as far as possible, a large proportion of fertility is retained on the farm.

* * *

Commercial fertiliser should be a supplement but not a substitute to the manurial supplies of the farm. Properly cared for stable manure is by all means the best remedy for soil fertility. About 60% of phosphorus is in liquid part and should be carefully saved. As a rule it is better to manure lightly and frequently than to apply a large amount at longer intervals.

* * *

If a farmer raises nothing but crops, he usually wastes considerable material that could be profitably used to feed animals. If he raises annuals only, he spends all his time on the farm, that is least likely to pay good wages. The farmers who raise both cash crops and stock make more than those who raise all crops or all stock.

* * *

Credit, like a buzz saw, is a powerful agency for good in the hands of those who know how to use it. They are about equally dangerous in the hands of those who do not understand them. Many a farmer would have been better off to-day, if he had never had the chance to borrow money at all, or go into debt for the things which he bought.

DAIRY TIPS

* * *
The cow is the best soil builder.
* * *

It usually pays to keep no more stock than one can raise hay or silage for in a rather poor year. Otherwise roughage will have to be bought in years of scarcity and high prices.

There is more in the Field than in the Bread.
* * *

Silo pays its cost in two years.
* * *

Skim milk (separate) has higher building values than whole milk. Don't shun it. It is next best to whole milk.

* * *
Keep your heart when you lose and head when you win.
Dairying can thrive to the measure of neatness.
* * *

Indian agriculture can thrive only with the cow.
* * *

Milk should supervene ghee ; milk first ghee next. Ghee or even butter cannot surpass milk. The former is only a fire food while the latter is a building and repair food too.

* * *
Neglect the quantity and concentrate on quality alone.
* * *

The stingy feeder cheats himself and the cow.
* * *

The bitterest enemy of the cow is the buffalo.
* * *

Nothing can solve the cattle problem as effectively as the Railway Service.
* * *

Farm efficiency combined with cow efficiency make up farm prosperity.
* * *

The farmer neither lives out of a canned garden nor milks a tin cow.
* * *

A workman may work 8 hours a day, but the clock of interest goes on for 24 hours a day! The race between labour and interest is the race between the hare and the tortoise.

* * *
All rates are thus triple rates that trouble the most.
* * *

There is nothing like simple interest for the peasantry in India. It has only compound compound interest.
* * *

It is the compound interest that compounds the case of Indian poverty and renders it chronic when not acute.

ROMANCE OF THE COW

* * *
Amortization scheme (payments by instalments) may prove panacea for India but who to launch it?
* * *

Cow plus plough is money, plough without cow is misery.

Plough without cow has no root!
Cow without plough has no fruit.

* * *
Cattle is capital, and plough is prosperity only when they can become symbolic of each other.

OUTSTANDING DEFECT OF RURAL LIFE

Excessive Pressure on Land.

Small size of holdings and progressive fragmentation.

Primitive methods of cultivation.

Waste of Farm manure.

Irregular hours of labour.

Insufficient and uneconomical utilization of women's services.

Lack of finance for farm work.

Old fashioned character of the subsidiary occupations.

Crushing indebtedness of the ryot.

Short employment.

Universal illiteracy.

Phenomenal poverty.

—*Sr M. Vishvesvaraya*—The Planned Economy for India.

Only add 'Too many poor cattle' and, foreign domination, and the picture becomes complete.

Without State Aid no country can overhaul and ameliorate its agriculture, and that is sadly wanting in India. Indian nation has however not to content with what patch work it can do under the circumstances. It has got to hammer on by 'agitating, agitating and agitating,' till it could bring to bear upon the Government to act and work out its arrears in this matter, and, to Educate, Unite and Hope, ² is its preliminary.

For,

Despair, good brothers, is no Godly grace;
Hope's eternal ray must light our path;
If hope is gone, with that goes action too,
If both are gone, what are we?

—*Kipling*

We want vision, we want enterprise and we must abandon old and beaten paths which have paralysed effort in the past. Let India show the courage to destroy and genius to rebuild by obeying the Cow Decalogue and get ressurected.

1. Dadabhai Naoroji.

2. King George V.

PEACE BE TO ALL

Great Lord and Master, Prince of Peace,
The blessing of thy grace pour forth,
That discord, hate and strife may cease
In East and West, in South and North.

Teach men, their fellow-men to love,
Of every colour, creed and caste;
And pour Thy blessing from above
To heal the hatreds of the past.

Lord, teach the races of mankind
As one great brotherhood to dwell;
And all Thy children closely bind
With links made strong by Love's great spell.

Open the deaf ears of rich and strong
To hear their weaker brothers' cry;
Help them to right each ancient wrong
Till hate of class for class shall die.

On all the world ray out Thy light
To banish clouds of fear and greed;
And all the warring faiths untie
In love's great universal creed.

So all Thy peoples, Lord, shall own
At last Thy sway, O Prince of Peace.
The holy seeds which Thou hast sown
Shall yield a thousand fold increase.



Extract from the Report of the Hides Cess Enquiry Committee Vol. I, published at Calcutta, Govt. of India Central Publication Branch 1930

(c) Defects arising from faulty handling of the carcass in villages and in slaughter-houses.

(1) Handling of the carcass in villages.

Causes : In India a very large proportion of hides is derived from 'fallen' stock, i.e. from animals which have died from causes other than slaughter. Owing to her light meat consumption and the sentiment against killing, especially of cattle, a very large proportion of cattle and a much smaller proportion of goats and sheep are left to die of old age. But cattle disease is rife and takes a heavy toll among animals whose conditions as regards feeding during the greater part of the year can only be described as semistarvation. Their resistance against the outbreaks of contagious diseases is feeble, and when a serious outbreak takes place large numbers of them succumb. During famines and seasons of drought, which occur every few years over large areas in the country, the toll of death is heavy. Then there are accidents, snakebites, falls from cliffs in broken-up and ravine country, injuries resulting from stones and sticks thrown at trespassing animals, the ravages of wild carnivorous animals especially leopards—all these contribute their little share to the production of 'fallen' hides and skins.

The condition of semi-starvation in which the animal population lives almost perennially, is aggravated in the case, and by the number of animals which have ceased to be useful. They are generally neglected and have to pick up for themselves such food as they can find over the scanty pasturage. 'Fallen' pelts are naturally poor—thin, dry, papery and devoid of substance.

Estimate of proportions of 'fallen' and 'slaughtered' stock : It is not possible to give statistics of the production of such hides and skins, as none are available. But the estimates of experts are almost unanimous that for India 'fallen' hides form about 75 per cent to 80 per cent and 'slaughtered' hides make up the balance. In the case of Sind, the Punjab and the North West Frontier Province, however, the percentage of 'slaughtered' hides is much higher. It has been given to us in evidence at a figure as high as 80 per cent.

In point of importance this entire industry (the hide and skin trade and the Indian leather-making, leather-working and allied industries) is one of the most important phases of India's economic life. Its annual gross value runs into many—as many as forty to fifty—crores of rupees. It not only gives employment to large numbers of men but—and this is an important fact to be kept in view—is a factor in the economic well-being of millions of India's depressed classes. Any action taken for its improvement will automatically, though perhaps gradually, help to better their lot. They are among the unorganized and silent submerged strata of the population of India, and have a legitimate claim on Government's active sympathy. The hide and skin trade and the tanning industry

APPENDIX A

have in the past rendered inestimable service to the Government and the country, and it is only right that they should claim that organized efforts should be made to improve their condition. We hope we have succeeded in proving that there is vast scope for work for the betterment of all branches of the industry and that any improvement effected in them will react favourably on the improvement of the economic conditions of the peasantry of India. Appalling waste is at present undoubtedly going on ; we have endeavoured to indicate the extent of the amount of loss and the directions in which attempts can and should be made to rescue it.

Extract from 'Current Science', dated November 1936 Vol. V, No. 5, Pages 260 and 261.

The leather industry has immense possibilities in India. In respect of resources of raw materials, e. g. raw hides and skins, India's position is very high among the different countries of the world. Out of the 600 million cows and kips of the world, India possesses about 160 million. Of the estimated 47 million head of the world's buffaloes, India has about 84 million ; of the 203 million goats, India claims 53 million, and of the total 575 million sheep and lambs in the world, the estimated share of India counts 41 million. The annual supply of hides and skins from this huge live-stock has been estimated by Arnold as under :

Cattle hides	.	.	20 million pieces
Buffalo hides	.	...	3 5 "
Goat skins	..	.	22 "
Sheep skins	...	..	11.5 "

Besides the jungles in India are proverbially full of snakes and lizards and there is no dearth of crocodiles in waters here. The skins of these wild and aquatic animals have of late been turned into normal trade commodities.

All these available hides and skins are suitable for the manufacture of nearly all the varieties of leather that India needs at present. Her cattle hides produce a shoe upper leather of medium and cheap grades, suitable for the shoes of the middle and poor classes of her population, while her goat skins, which in quality are among the best in the world and produce the finest kind of upper leather, can be used in the making of shoes for her rich and classy people and the ladies. The sheep skins produce the lining leather and the buffalo hides supply the leather for soles and insoles of boots and shoes and for multifarious industrial purposes. The cattle hides also produce leather for trunks, suit cases, bags, straps, belts, etc., and the sheep, goat and reptile skins produce excellent leather for fancy and luxury articles. Upholstery leather can be made from cattle hides, goat and sheep skins.

India is well provided with many vegetable tanning materials. Three of them at least have a very wide use. These are babul bark (*Acacia arabica*) of Northern India, avaram or tarwarbark (*Cassia auricula*) of Southern India, and myrobolans (*Terminalia chebula*). These materials have been in use in the

APPENDIX B

- 44 Principles of Sociology—Herbert Spencer.
- 45 Agricultural Statistics—23-24.
- 46 Desh Darshan—Shiv Nanandansinh Thakor.
- 47 Bharat Bharati—Marthili Sharana Gupta.
- 48 Indian Journal of Economics-Vol. IX-pt. 2.
(Indian Pastures and Fodder Supply)—L. L. Sundar Rao.
- 49 Manu Smriti.
- 50 Shat Path Brahmin.
- 51 Pranav Vad. Brahma Vadin Press Madras.
- 52 Quarterly Journal of the Mythical Society—(L. L. Sundar Rao.)
- 53 Vashishta Dharma Sutra
- 54 Gotama ,, ,,
- 55 Parskara Grihya Sootra.
- 56 Gomedha—Shreepad Damodar Satavlekar
- 57 Ved men Krishividya. ,,
- 58 Vaidic Sabhyata. ,,
- 59 Siddhantasara—Manulal Nabhubhai Divedi
- 60 Hindu Ved Dharma—Principal A B Dhruva
- 61 Arya Varta No Itihas—Prof. Ramdev.
- 62 Riddle of Ramayana—C V Vaidya
- 63 Epic India—C V. Vaidya
- 64 Hist of Medieval Hindu India' ,,
- 65 Statistical Compamon.
- 66 Forward Congress and Winter No.—The Land We Live in.
- 67 Cow Protection in India—A. L. Sunderam (The South Ind Human L.)
- 68 Cattle Problem in British India—M M Shah, The Bombay Hum League.
- 69 Improvement in Indian Livestock—Jayantilal N. Mankar—(B. H. L.)
- 70 Cow—The Mother of Prosperity—Haines.
- 71 Industry Special Cattle No.—July 1926 (Calcutta).
- 72 Special Cattle No of The National Geographical Society of U. S.
America 1927.
- 73 Allahabad Farmer—Edited by Allh. Agricultural Institute 32-33
- 74 Agric. Journal of India—(Pusa Vol. XXV- 30)
- 75 Journal of Animal Husbandry and Dairying in India (Imperial
Council of Agr. Research—Pusa)
- 76 Pirtle's Dairying History of the World.
- 77 The Story of Americanization.
- 78 American Pioneers in 1889.
- 79 Industries of the United Provinces—Sir Atul Chatterji.
- 80 Young India—Mahatma Gandhi.
- 81 Al Koran
- 82 Vaidic Vijnan (Monthly—Ajmer) Series of Articles on Gomedh.
- 83 Vaidic Dharma ,, Aundh—Edited By S. D. Satavlekar.
- 84 Upasak Dashang Sootra (Treating about Jam Goraxa).
- 85 Dasha Shrivaka Charitra.

86 Go Karuna Nidhi—Swami Dayanda Sarasvati.
87 Ved Our Pashu Yajna.
88 Mansa Meemansa.
89 Vaidic Pashu Yajna Meemansa—Prof. Vishvanath Vidyalkanka.
90 Go Raksha Kalpa Taru—Valji Govindji Desai.
91 Books on Ghee & Milk—Dr Godbole & Sadgopal
92 Indo Aryans—Rajendra Mitra.
98 Rhys Davids—Buddhist India.
94 „ Sacred Books of the Buddhists Series.
95 „ „ East.
96 Sukra Neeti—B. N. Sarkar
97 Islami Gorakshan—Syed Nazir Ahmed (Sitapur).
98 Cow Protection Under Muh. Rule—Dr. Syed Muhmod Ph D.
99 Presidential Address of Hakim Ajmal Khan at All-Ind. Muslim League.
100 Kurban and Hindu Muslim Unity. „ (Young India)
101 (Presidential Address At I. N Congress at Cocanada 28)
102 Hoard's Dairy Man (U.S.A).
103 Feeds and Feeding—Henry and Morrison.
104 Go Raksha—A Prize Essay Under Mahatmaj's Scheme.
 (Prepared by Dahyabhai H. Jani—The Present Essayist),
105 Prize Essay Under Dharmpur King's Scheme (Awarded By B. H L.)
106 „ Lmdli „ 1929
107 Obituary Notes on Jill—Dahyabhai H. Jani (Nava Jeevan)
 „ (Shubha Sanghra Pt).
108 Pictogram's on Jill „ (Krishi Vijnan-A)
 Dayabhai H. Jani (Mss Mag. Poona Ag.C)
109 Pictogram's Charts and Graphs „ (Sarjan Gandhi Anka)
110 Some Figures and Facts „ (Panchang, Sarva V. Kadi)
111 Dugdhanna Shashtra „ (Prasthan, 1988)
112 Milk and Milk Testing—Van Slyke.
113 Larson and Putney
114 Conn's Dairy Bacteriology.
115 The Feeding of Animals—Jordan
116 Monograph On Milk.
117 Food—McCarson.
118 „ —Huchinson.
119 Principles of Dairying—Henry Judkin.
120 A Short, His. Of Aryan Medical Sc. Sir Bhagavatsinhj
121 The Crops of the Bom. Pre —Rao Bahadur P. C. Patil (B B 199)
122 Journal of Dairying and Dairy Farming—(Wm Smith Vol I, P. 2
 (1914. Poona, Formerly)

123 Poona Agr. College Magazine.
124 Improvements of Cattle Breeds in Bom Pry B Bulletin 186
 (Mr. Bruen.)

APPENDIX B

- 125 Ankha Ughado-Ramji Hansaraj (Amreli)
- 126 Hindustanna Ayat Vepar Na Ankuda—Born Shroff Assn.
- 127 Pa Pa Pagali, D. H. Jam.
- 128 Harijan (Weekly).

ROMANCE OF THE COW

(Explanatory Notes . By Mr. Hari Lal)

The monogram of the League is set in between two plane figures having reference to vegetable and animal and between these two the attention of the League is divided. The League stands for clean and sane bill of fare, which of course, cannot be obtained from other than the vegetable kingdom. Milk and honey are exception. The League further aspires to bring about not the humane but the complete cessations of slaughter of animals, birds and aquatic life. The thought that human stomach is not the burial place of goats and cows calls for support and sympathy from all sides.

Colour is the mode of expression of those beings (ordinarily called Devtas) who are far ahead of us in the upward and forward course of evolution. Man, sometimes in the course of ages to come, will attain the same language of colours and beyond the language, colours is the language of silence more perfect than the language of speech.

Now on the either side of the monogram there are two plane figures each terminating in cow form. The one on the right is referred to the vegetable and shown in its own way the amount of progress made by it till now.

The plane figure on the left of the monogram bears on the animal and points to the march or progress made by it, in the upward and onward course of evolution.

Our vegetables formed the mineral kingdom on the Moon now reduced to the grade of Satellite and similarly our animals were in Moon—vegetables and the Earth was then non-existent.

It is chronicled in *Sankhyā Darsan* that a *Brahmand* is made for the benefit of *Jiva*. Inside of the void sphere the regions known as *Bhu*, *Bhuvar* and *Svar* collectively called *Trilok* are set aside for the benefit and evolutions of kingdoms of Nature severally named minerals, vegetables, animals and humans.

Every one plane of Nature is represented in the bodies of minerals, vegetables, animals and humans. *Ishvara* the Macrocosmic Soul is styled *Virat* or *Vishwanar* under the psychic condition of identifying Himself with all the gross bodies of the Universe. This refers to the dark shade of burnt sienna indication of dense matter.

Next above and over the shade of the dense matter is the lighter shade of the same hue and is indicative of *Pranamaya Kosha* or life coil. The light red of the crimson and the green are respectively indicative of *ham-deh*—the vehicles of passions and emotions and *Mansik* body of lower order through which intellect and reason show forth. *Ishvara* identifying Himself with all *Sukshma* or subtle bodies of the Universe is styled (in that psychic state of mind) *Hiranyagarbha* and

ROMANCE OF THE COW

is the collective totality of subtle matter. In the minerals is the fullest universe of life in the matter and for this reason response from within the outside movement is restricted. Put the other way it means that the *Kam-Deh* of the minerals is very poorly made and through the tiny and scant vehicle of Desire we have come to know of the facts of chemical affinity and fatigue of metals. In the vegetables the working of consciousness is comparatively less hindered and the students of Nature apprise us of their likes and dislikes and the ingenious methods they adopt in acquiring sustenance.

The green tip on the top of the left plane figure is indicative of the feat that the animal has gone far ahead of the vegetable and that it possesses an extra vehicle which the vegetable does not possess. Through the medium of this body the animal begins to exercise the principle of thinking called *Mobat* in Metaphysics. It is the coming into being of Lower Mind in germinal state. The response from within is freer but not fuller—but all the same the choice of expressing is greatly widened

In the backgrounds of monogram are seen some colours laid out in wavy motion. Each of the colour represents one emotion in its unmixed or isolated state. Mauve represents spirituality of very high order and the blue indicates the feeling of the Universal brotherhood of humanity. In the rose love is freed of the dross of selfishness and the green proclaims sympathy and compassion of deepest nature. The clear yellow in the perimetre of the circle (Cycle) shows that the interest has gained victory over selfishness and the owner of such an intellect acts for the good of all.

THE AGE NOW PASSING

(Explanatory Notes: By Mr Hari Lal)

Inside of the perimetre of the circle two signs rise to view. Each sign is complete in itself and none is the complement of the other. Both the signs separatively and simultaneously aim at the same thing we have in mind to convey. Into the meaning of the Virtue—cow of no gait, we need not enter here for that has been done once. We merely turn our head to the back-ground made up of three separate hues. These hues are reflections of psychic traits working in human mind on paper. There is no line of demarcation between any two hues, each is seen running freely into the other. Each is distinguishable from the other and none is distinctly apart from its neighbouring hue.

White is the sign of *Sattva* and is the general title given to all the good traits of highest order and quality working in and belonging to human mind.

At whatever time goodness of mind declines from the acme fixed by sages, *Raja* begins to take hold of the mind. It is shown in red on paper.

In the metaphysics of the Hindus, the term is explained as the cause of attachment, and its other meaning is passion—nature as well. In modern life, manufacturers, mills, factories, limited concerns are its fields of activities. Commercial attitude, businessman's courtesy, cash on the counter, strikes, lock-outs and law-suits are its faithful traits. And still further letters patent, and copyright, legal documents and commercial treatise, Stakes and Stock exchange properly belong to the domain of *Raja*.

Below the attribute of *Raja* is the inferior order of human mind and is the poorest in quality. Sloth, indolence, delusion are its chief characteristics. Exclusiveness in social circles, restaurants and hostels, boxing and hunting, lynching and bull fight, distilleries and slaughter houses, photography and advertisements, comestics of preserved food are the faithful features of the attribute that is next to and below *Raja*.

Both the signs singly identically sum up in a broad way the general trend of the Age now passing. *Sattva*, the purest and most luminous tells of the charitable disposition of mankind. In grade of spiritual purity *Raja* stands next to *Sattva* and is the sign and cause of speed and commerce. It occupies the red segment in the plane of the circle. In *Tama*, the purity is veiled. Its luminosity is its obscurity. It has dark segment for its locus in the circle and proclaims the evil designs of politicians.

Exceedingly far behind the dark veils of Nature there is ॐ (I) having for its locus the intermediate place between अ (A) and उ (U) the letters of Pranava—ॐ Om. This ॐ (I) is the symbol of *Daiva Prakriti* and is the fountain head of the force of Necessity. Through and by it the Play of *Shri Krishna* (creation) takes place. It is this force of necessity symbolised by Sanskrit letter ॐ (I) that prescribes the course to the three *gunas* and controls their strength and diminution from age to age as necessity demands. It places the moral before us that all wrongs have Divinity for their origin.

In modern life its reflection may be seen in wages and salaries, in donations and scholarships, in free education and libraries, in hospitals and old age pensions. In all of them the act of giving is strong that involves certain amount of sacrifice on the part of the giver.

THE LORD MANIFESTS HIMSELF IN 16 KALAS.

— DIAGRAM —

(Explanatory Notes : By Mr Hari Lal)

The *Jiva* sleeps in minerals. It means that *Jiva* is imprisoned so to say in the rigid and inflexible *kosh* (body) and it is not able to feel or make response to the movements around. Yet still sensations and feelings of excitements are imparted to it from outside by violent shocks resulting from storms, catastrophe, earthquakes, volcanoes and such like furious agencies well known to those who are pretty up in the subject of Geology. This is the method adopted by Nature to introduce feelings of agitation in the minerals. In this manner the idea of loneliness is done away with, the attention of the *Jiva* is drawn outward.

Of course, now the *Jiva* feels that he is absolutely not alone and that there are movements going on all about him. The same thrills and quivers and excited feelings are allowed to accumulate in some shape of vibration or wave like form. As soon as the *Jiva* has stored within himself a sufficient amount of vibratory movement that answers to the standards fixed by our *Ishvar*, he becomes the recipient of soft and flexible sheath. The door leading to the vegetable world is thrown open and the *Jiva* is allowed to enter into the new and higher kingdom.

Here at the threshold of the Plant world the *Jiva* is given a vehicle of Desire (*Kam-deh*) which the minerals do not possess. This newly given vehicle is shown by plus signs in the diagram. For past ages, in plants, shrubs and trees, the *Jiva* resides. In and through his new body of desire, the *Jiva* keeps in touch with the outer world by the best of sunshine, by the fall of rain, and by the strong current of the air. In this manner, the *Jiva* in plants, is allowed to become more sensitive and touchy until not unlike the *Jivas* in minerals, it also gains and gathers within itself the required amount of vibrations of impact leading it to still higher and further doorway and this time into the animal world. Here at the place and amount of crossing the *Jiva* is given the vehicle of Lower Mind in and through which Intellect (*Mobat*) operates. This body is shown by the sign of short straight dashes.

By hunting for food and by fighting, the mental powers of the animal become keener and the animal becomes wittier by the sheer force of thinking. This grade of Intellect has only to do with food and sex.

There are certain animals who are now daily and constantly under the direct care of Man. To name them there are horses, cattle, cats and dogs etc. And it is not untrue that these animals are to a great extent far ahead in the descending scale of evolution of their fellow creatures living in the wild state. These animals, who remain in contact with man and serve bodily try to please the master and thereby awaken within themselves the emotion of devotion and intelligence of higher order.

GAITS OF VIRTUE OR DHARMA THROUGH AGES

It is by this means and method that the *Jiva*, in animal, drifts asunder from the group-soul (collective consciousness) and becomes the fit recipient of the casual Body shown by fine dots. This vehicle is only and solely possessed by Man and none else. The vehicle of casual Body is the stepping stone to transmigration and re-incarnation. And in and through this vehicle Mind of Higher Order (*Budhi*) begin to become active, slowly and painfully, Slowly through ages and aceous *Kam* (Desire) is subjugated and soon after man instead of hunting and chopping others looks for an opportunity to lay down his life for the benefit of others. The first act of sacrifice begins round sex and in and through family life.

And then, when the dull hard brown grey of selfishness is transmuted to lummous blue— green of deepest sympathy and compassion, and as much as crimson, brown grey of selfish love is changed into pale rose by acts of unselfish efforts. Man blossoms into flower of Humanity.

There is moral for us to assimilate, and it is that animals should never be handled roughly and treated with frowns on. At the present stage of the cosmic evolution the animals most need the development of affection and devotion as well as intelligence. Through and by means of these emotions animal gains individuality. And therefore it is our bounden duty to work up those qualities in animal and help him forward to take up the upward course even as we look up to Perfected Intelligence for help and guidance

GAITS OF VIRTUE OR DHARMA THROUGH AGES

(Explanatory Notes: By Mr. Hari Lal)

The figure of cow drawn in illustration is not the figure of genuine cow or of any species of cow. This cow is the wholeness of all the attributes of virtue. All that there is of virtue of Dharma is included in it. The figure of cow when complete is the sign of consummate of Virtue. And the period during which the figure remains complete is called *Krita Yug* or Golden Age.

Mortal years roll on and pass by until at the completed moment one leg disappears and Virtue begins to totter. And the period during which Virtue has for its support three legs is called *Trata Yug* or Silver Age.

Similarly the next computed moment arrives in its course of time and the second leg disappears. From now the movement of the cow is changed from tottering to falling gait. And the period during which Virtue has for its support two legs is called *Dwapar Yug* or Bronze Age.

And still further greater reduction of Virtue takes place and this time it is fullest and last. One more leg is taken away. The seeing of the movement is now from the falling gait to no gait. And the period during which Virtue has for its support one leg is *Kali Yug* or Iron Age.

The period of Kali set in when the incarnation period of Shri Krishna came to an end. It is computed that on the 13th April 1916, A.D., 5016 years of this Age had passed away.

ERRATA

Page No	Para No	Line No	Read	Instead
xiii	2	5	fish	a fish
xlii	2	10	Crores	course
xlv	6	10	psyche	psychic
3	3	5	combined	conspired
5	2	1	view and reevaluate	view
9			Delete last four lines	
11	3	4	enter	enters
12	2	1	Expansive	Expensive
12	4	13	of understanding	understanding
13	4	7	to that	that
14	2	6	(plate supras)	(vide plate)
17	7	3	nectarlike	nectar like
24	5	1	dwelve	dwelves
31	1	2	unity	unityr
35	1	8	gorochan or ghee	grochan
35	3	2	almost	all
"	"	"	so	a bit
"	4	2	Bubalus	Bapalus
"	"	3	Bovine	Taurine
38	7	1	Awkward revenue	revenue
42	5	3	ad	et
45	1	6	thereof	whereof
"	4	2	dilemma	dilemna
46	1	1	writings	writing
50	7	2	meal	meals
53			Pages from 70 to 85 be read in continua- tion of page 53	
90	3	10	Vaccaphyles	Vaccapholia
111			Read 380 Canned Pedes- tal of the prospect (Below the picture)	
113	2	5	she	it
113	5	5	Hale	Hail
116	3	3	Vaccanomy	Vacconomy
oppo to page 118		(Illustration's Heading)	JILL	GILL
126		25	per c c	c c
132	7	Last line	(solids)	(soleds)
136	6	2	vegetarian	vegetarians
137	2	2	Innocents	Innocence
137		9	The WORLD	WORLD
139			Bacteria & Salts	Becteria salt
140		4	summum	sumum
156	2	3	partly be	be
157			Octagon of	Octagon (in block)

Page No	Para No	Line No	Read	Instead
159	1	3	Lactostarved?	Lactostarved
160			COWS	COW (in heading)
174		9	125 lbs	25 lbs
175		Heading	CHAPTER XVI	HAPTER XVI
176			* * * * between 6 and 7 lines	
188	1	6	and proved	proved
"		12	built	build
194	6	3	give	gives
195	1	1	such	Such
"	5	2	did only	only
196			ALWAYS	ALWAYIS
196	3	3	given of course	of course
196	3	4	into	for
199	3	7	but cannot	cannot
"	4	12	200 crores	2000
199			The middle bottle to be 83% black and the bottom one 66% Pest loss being 17% to 33%	
202	2	4	bases	basis
203	2	1	regain it	regain
203	6	2	more	to more
204		10	of	nf
205		5	INDICATES	INDICATED
205	7	2	to	for
205		Last	fit	fits
206	2	2	ad lib	and limb
208	4	2	residuum	residum
213	Heading		TEST & MEASURE	
213	4	1	33%	93%
213	5	3	or dust	dust
213	7	2	used as required	used
214	3	1	By punching	Punching
214	6	5	as	if
215	1	2	building	guildng
215	4	5	they do	do
217	1	5	vaseline or castor oil	vaseline
220	3	3	combined can	can
221		24	tieble	trible
222		7	symbiotic	symbiotic

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